

STRUCTURAL QUANTITY SURVEY AND MARGINAL ESTIMATE

DS-D 0019 (REV. 02/11/08)

													RECEIVED IN ESTIMATE SECTION BY	DATE
													QUANTITIES BY	DATE
													D. Nguyen-Tan	5/14/2012
CHARGE	EXPENDITURE AUTHORIZATION	BRIDGE NUMBER				LENGTH				CHECKED BY	DATE			
	06-2HT20	42C 0669				103.1				H. Tuazon	5/14/2012			
BRIDGE						WIDTH	LONG SPAN	SPANS		REVISED BY	DATE			
G Street Overcrossing						70	52.2	2						
DISTRICT	COUNTY	ROUTE	PM	TYPE	DEPTH	SKEW	DESIGN SECTION		APPROVED BY	DATE				
06	FRE	99	20.74	CIP/PS Voided Slab	2	BB 2.6° EB 1.0°	6							
CODE	CONTRACT ITEMS	UNIT	SUPERSTRUCTURE			SUBSTRUCTURE			RETAINING WALLS			TOTALS	PRICE	AMOUNT
			QUANTITY	CHECK	* USE	QUANTITY	CHECK	* USE	QUANTITY	CHECK	* USE	* USE		
192003	STRUCTURE EXCAVATION (BRIDGE)	CY				1732	1738							
192037	STRUCTURE EXCAVATION (RETAINING WALL)	CY							284	286				
193003	STRUCTURE BACKFILL (BRIDGE)	CY				897	888							
193013	STRUCTURE BACKFILL (RETAINING WALL)	CY							385	397				
193030	PERVIOUS BACKFILL MATERIAL (RETAINING WALL)	CY							17	16				
500001	PRESTRESSING STEEL	LB	12,993	12983										
510051	STRUCTURAL CONCRETE (BRIDGE FOOTING)	CY				215	214.22							
510053	STRUCTURAL CONCRETE (BRIDGE)	CY	480.1	487		324	326							
510060	STRUCTURAL CONCRETE (RETAINING WALL)	CY							194.4	195				
519088	JOINT SEAL (MR 1)	LF	141	141										
520102	BAR REINFORCING STEEL (BRIDGE)	LB	111343	110774		54295	55127							
520103	BAR REINFORCING STEEL (RETAINING WALL)	LB							25113	24774				
833142	CONCRETE BARRIER (TYPE 26 MODIFIED)	LF	238	238					267	267				
839514	METAL RAILING	LF	238	238					267	267				
511035	ARCHITECTURAL TREATMENT	SQFT				1780	1849		1642	1574				
	PREPARE AND STAIN CONCRETE	SQFT				1300	1309							
						* ESTIMATING BRANCH TO INPUT						MOBILIZATION %		\$
QUANTITY PER GIRDER	LENGTH OF PC PS GIRDER											SUB TOTAL-CONTRACT ITEMS		
	CUBIC YARDS PCC											CONTINGENCIES %		
	POUNDS BAR REINFORCING											SUPPLEMENTAL WORK		
	POUNDS PRESTRESS STEEL											TOTAL		\$
	NUMBER OF GIRDERS											FOR BUDGET PURPOSES-SAY		\$

SUMMARY-STRUCTURE EXCAVATION AND STRUCTURE BACKFILL

DS-D-0022 (REV. 02/11/08)

<i>Estimating Section to forward to RE Pending File</i>						
STRUCTURE				BRIDGE NUMBER	DATE	CALCULATED BY
G Street Overcrossing				42C 0669	5/14/2012	D. Nguyen-Tan
DISTRICT	COUNTY	ROUTE	EA NUMBER			CHECKED BY
06	FRE	99	06-2HT20			H. Tuazon
LOCATION	STRUCTURE EXCAVATION		STRUCTURE BACKFILL		PERVIOUS BACKFILL MATERIAL	
	ESTIMATE	CHECK	ESTIMATE	CHECK	ESTIMATE	CHECK
Abutment 1	729.81	735.4	395.38	397.9		
Bent 2	260.84	261.4	113.14	111.3		
Abutment 3	741.32	741.3	388.43	379.1		
Retaining Walls	283	285.7	385	396.5	16	16.4
TOTAL CY	2015	2023.8	1282	1284.8	16.36442295	16.4

CONCRETE SUMMARY

DS-D-0050 (REV. 02/11/08)

Estimating Section to Forward to RE Pending File

STRUCTURE		BRIDGE NUMBER	EA	DISTRICT	COUNTY	ROUTE	CALCULATED BY	CHECKED BY	
G Street Overcrossing		42C 0669	06-2HT20	6	Fre	99	D. Nguyen-Tan	H. Tuazon	
SUPERSTRUCTURE	ESTIMATE	CHECK	SUBSTRUCTURE		ESTIMATE	CHECK	RETAINING WALLS	ESTIMATE	CHECK
Voided Slab	429.4	392.9	Abutment 1		148.7	147.91	Right Ret Wall at BB	39.2	183.7
Bent Cap	32.0	48.81	Abutment 3		145.5	147.91	Left Ret Wall at EB	46.0	
End Diaphragms	18.7	45.4					Right Ret Wall at EB	60.9	
			Bent 2 Columns		29.5	29.94	Left Ret Wall at EB	48.3	
							TOTAL CY (RW)	194.4	195
							OTHER	ESTIMATE	CHECK
			TOTAL CY (SUB)		324	326	TOTAL CY (OTHER)	0	0
			Bent Footings		87.11	214.22	BREAKDOWN BY CONCRETE TYPES		
			Abutment Footings		127.04			ESTIMATE	CHECK
							Struct Conc. Bridge Footing	214.2	214.22
							Struct Concrete Bridge	803.8	812.87
							Struct Conc. Retaining Wall	194.4	195
							Struct Conc., Other		
TOTAL CY (SUPER)	480	487	FOOTING TOTAL CY		214	214	TOTAL CY	1212	1222

BAR REINFORCING SUMMARY

DS-D-0067 (REV.02/11/08)

Estimating Section to Forward to RE Pending File

STRUCTURE G Street Overcrossing	BRIDGE NUMBER 42C 0669	EA 06-2HT20	DISTRICT 06	COUNTY FRE	ROUTE 99	CALCULATED BY D. Nguyen-Tan	CHECKED BY H. Tuazon	
BAR SIZE	SUPERSTRUCTURE		SUBSTRUCTURE		RETAINING WALLS			
	ESTIMATE	CHECK	ESTIMATE	CHECK	ESTIMATE	CHECK	ESTIMATE	CHECK
3	812	838	0	0	0	0		
4	12691	12667	12649	13071	1248	1215		
5	18291	18375	5291	5387	12678	12636		
6	47775	46887	2256	2303	10695	10437		
7	2785	2788	4123	4241	0			
8	8517	8584	9254	9254	0			
9	0		12359	12494	0			
10	18288	18463	6971	6971	0			
11	0		326	325	0			
14	0		0		0			
18	0		0		0			
SUBTOTAL	109160	108602	53230	54046	24620	24288	0	0
2% SPLICES	2183	2172	1065	1081	492	486	0	0
TOTAL	111343	110774	54295	55127	25113	24774	0	0
NOTES								

CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/6/12

Profile Information for "GST1" Line

POT A	
Elev.	290.1
Sta.	32+00.00
Grade	4.000%

BVC1	
Elev.	291.1
Sta.	32+25.00
Grade	4.000%

EVC1	
Elev.	290.983
Sta.	34+75.00
Dist. from BVC	250.00
Grade	-4.0936%

BVC2	
Elev.	290.983
Sta.	34+75.00
Grade	-4.094%

EVC2	
Elev.	287.6
Sta.	36+55.00
Dist. from BVC	180.00
Grade	0.3347%

POT B	
Elev.	287.62
Sta.	36+60.00
Grade	0.3347%

Coefficients for Parabolic Curve

A1	-0.00016	<u>Notes:</u> 1. Units are in feet
B1	0.04	
C1	291.1	

Coefficients for Parabolic Curve

A2	0.000123
B2	-0.04094
C2	290.983

CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/6/12

Wall Elevations

Description	Station	Profile Elev (ft)	LT EOD or RWLOL	RT EOD or RWLOL	LT Slope	RT Slope	LT Elev (ft)	RT Elev (ft)
Begin BBR1	32+35.00	291.484	35	35	-2%	-2%		290.784
	32+60.00	292.302	35	35	-2%	-2%		291.602
	32+80.00	292.810	35	35	-2%	-2%		292.110
End BBR1	32+89.52	293.007	35	35	-2%	-2%		292.307
Begin BBL1	32+35.00	291.484	35	35	-2%	-2%	290.784	
Begin BBL2	32+59.00	292.273	35	35	-2%	-2%	291.573	
	32+60.00	292.302	35	35	-2%	-2%	291.602	
	32+80.00	292.810	35	35	-2%	-2%	292.110	
End BBL2	32+92.68	293.066	35	35	-2%	-2%	292.366	
Begin EBR1	34+09.60	292.968	35	35	-2%	-2%		292.268
	32+20.00	290.900	35	35	-2%	-2%		290.200
	32+40.00	291.664	35	35	-2%	-2%		290.964
Begin EBR2	34+40.00	292.217	35	35	-2%	-2%		291.517
	34+60.00	291.561	35	35	-2%	-2%		290.861
	34+80.00	290.781	35	36.3	-2%	-2%		290.055
End EBR2	35+00.00	290.036	35	41.5	-2%	-2%		289.206
Begin EBL1	34+10.80	292.944	35	35	-2%	-2%	292.244	
	34+20.00	292.745	35	35	-2%	-2%	292.045	
Begin EBL2	34+27.00	292.575	35	35	-2%	-2%	291.875	
	34+40.00	292.217	35	35	-2%	-2%	291.517	
Begin EBL3	34+60.80	291.532	35	35	-2%	-2%	290.832	
	34+60.00	291.561	35	35	-2%	-2%	290.861	
End EBL3	34+75.00	290.983	35	35	-2%	-2%	290.283	

CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/6/12

Bent Elevations

Description	Station	Profile Elev (ft)	Offset from "GST1" Line	Slope	Elev (ft)
Column 1	33+50.00	293.571	26.25	-2%	293.046
Column 2	33+50.00	293.571	8.75	-2%	293.396
Column 3	33+50.00	293.571	8.75	-2%	293.396
Column 4	33+50.00	293.571	26.25	-2%	293.046

CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/10/12

Metal Railing

Description	Begin Sta	End Sta	Length	
BB Rt Ret Wall	32+35.00	32+89.52	54.52	
BB Lt Ret Wall	32+35.00	32+92.68	57.68	
EB Rt Ret Wall	34+09.60	35+00.00	90.40	266.80
EB Lt Ret Wall	34+10.80	34+75.00	64.20	
Bridge (Rt side)	32+89.52	34+09.60	120.08	
Bridge (Lt side)	32+92.68	34+10.80	118.12	238.20
			505	505

Total Metal Railing 505 LF

Concrete Barrier (Type 26 Modified)

Description	Begin Sta	End Sta	Length
BB Rt Ret Wall	32+35.00	32+89.52	54.52
BB Lt Ret Wall	32+35.00	32+92.68	57.68
EB Rt Ret Wall	34+09.60	35+00.00	90.40
EB Lt Ret Wall	34+10.80	34+75.00	64.20
Bridge (Rt side)	32+89.52	34+09.60	120.08
Bridge (Lt side)	32+92.68	34+10.80	118.12
			505

Total Concrete Barrier (Type 26 Modified) 505 LF

CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/10/12

Joint Seal (MR 1")

At BB

Quantity	1 each
Skew	2.58 degrees
Distance, EOD to EOD	70.00 ft
Length along skew	70.1 ft
Total Volume	70.1 ft

At BB

Quantity	1 each
Skew	0.98 degrees
Distance, EOD to EOD	70.00 ft
Length along skew	70.0 ft
Total Volume	70.0 ft

Total Joint Seal (MR 1") **141 LF**

Prestressing Steel

Length, BB to EB	103.099	ft
P _{jack}	7500	kips
Unit Weight steel	490	lb/ft ³
P _{jack} /P _u	75%	
Area of strands	37.04	in ²
Weight	12,993	lb

Total Prestressing Steel **12,993 LB**

CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/10/12

Structural Concrete, Bridge Footing

Description	Abutment 1	Abutment 3	Bent 2
Number of units	1	1	4
Length	70	70	14
Width	13.5	13.5	14
Thickness	1.6667	1.6667	3
Key Area	2	2	0
Volume (ft ³)	1715	1715	2352
Volume (CY)	63.52	63.52	87.11

CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/10/12

Total Structural Concrete, Bridge Footing **215 LB**

CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/10/12

Structural Concrete, Bridge

Abutments

Description	Abutment 1	Abutment 3
Backwall		
Number	1	1
Length	70	70
Bearing Pad Thickness	0.125	0.125
Width	3.625	3.625
Thickness	1	1
Backwall Volume (ft ³)	253.75	253.75
Backwall Volume (CY)	9.40 CY	9.40 CY
Stem		
Number	1	1
Bottom of Ftg Elev	273.75	274
Footing thickness	1.6667	1.6667
Top of Backwall Elev	293.17	293.1
Length	70	70
Width	14.1283	13.8083
Thickness	3.5	3.5
Stem Volume (ft ³)	3461.43	3383.03
Stem Volume (CY)	128.20 CY	125.30 CY
Shear Key		
Number	2	2
Length	3.625	3.625
Width	2.5	2.5
Thickness	1.6	1.5
Shear Key Volume (ft ³)	29.00	27.19
Shear Key Volume (CY)	1.07 CY	1.01 CY
Wing Wall		
Number	2	2
Length	17.7533	17.4333
Width	7	7
Thickness	1.0833333	1.08333333
Wingwall Volume (ft ³)	269.26	264.41
Wingwall Volume (CY)	9.97 CY	9.79 CY
Abutment Volume (CY)	148.65 CY	145.50 CY

294.1

CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/10/12

Bent

Description	Column 1	Column 2	Column 3	Column 4
Top of Deck Elev at Column	293.05	293.40	293.40	293.05
Deck and Cap Thickness	4.333	4.333	4.333	4.333
Bottom of Footing Elev	268.5	267.4	266.4	265.4
Footing Thickness	3	3	3	3
Cross sectional area	10.500	10.500	10.500	10.500
Column Length (ft)	17.21	18.66	19.66	20.31
Column Volume (ft ³)	180.73	195.96	206.46	213.28
Column Volume (CY)	6.69 CY	7.26 CY	7.65 CY	7.90 CY

Bent Cap

Description	Column 1
Length	67.17
Depth	2.333
Width	5.5
Bent Cap Volume (ft ³)	861.95
Bent Cap Volume (CY)	31.92 CY

CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/10/12

Superstructure

Description	Voided Slab
Slab	
Length (ft)	101.10
Width (ft)	70
Thickness (ft)	2
Volume Subtotal	14153.85
Volume Subtotal	524.22 CY
Voids (Subtract from Slab)	
Num of Voids	33.00
Length of Voids (ft)	93.35
Area of Void (ft ²)	0.79
Void Length (ft)	93.35
Volume Subtotal	2419.43
Volume Subtotal	89.61 CY
EOD Radius (Subtract from Slab)	
Number	2.00
Length (ft)	101.10
Width (ft)	1.4166667
Thickness (ft)	1
Volume Subtotal	143.22
Volume Subtotal	5.30 CY

CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/10/12

End Diaphragms	
Number	2
Length (ft)	67
Width (ft)	2.5
Thickness (ft)	1.5
Volume Subtotal	502.50
Volume Subtotal	18.61 CY
Superstructure Vol (CY)	447.91 CY

Structure Excavation

Description	Abutment 1	Abutment 3	Column 1	Column 2	Column 3	Column 4
Number of units	1	1	1	1	1	1
Length			16	16	16	16
Width			16	16	16	16
OG Elev			275.41	274.32	273.24	272.24
FG Elev			273.91	272.82	271.74	270.74
Bottom of Ftg Elev			268.5	267.4	266.4	265.4
Volume (ft ³)			1768.96	1771.52	1751.04	1751.04
Volume (CY)	729.81	741.32	65.52	65.61	64.85	64.85

Total Structure Excavation **1,537 LB**

CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/10/12

Structure Backfill

Description	Abutment 1	Abutment 3	Column 1	Column 2	Column 3	Column 4
Number of units	1	1	1	1	1	1
FG Volume			1384.96	1387.52	1367.04	1367.04
Length of Col			2.41	2.42	2.34	2.34
X-Sectional Area of Column			10.50	10.50	10.50	10.50
Volume of Col			25.31	25.41	24.57	24.57
Footing Vol			588	588	588	588
Volume of Concrete			613.31	613.41	612.57	612.57
Volume (ft ³)			771.66	774.11	754.47	754.47
Volume (CY)	395.38	388.43	28.58	28.67	27.94	27.94

Total Structure Backfill **813 LB**

Aesthetic Treatment

Location	Approx height of stem	Width of Abutment	Area of Texture (ft ²)
Abutment 1	11.500	71.000	817
Abut 1 WW	7.000	21.000	147
Abutment 3	11.500	71.000	817
Abut 3 WW	7.000	21.000	147

1780 SQFT

G Street Overcrossing

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/6/12

STRUCTURAL CONCRETE

Panel No.	Design Height	Panel Length (ft)	Begin Station	End Station	Top of Wall Elev Begin (ft)	Top of Wall Elev End (ft)	Avg Top of Wall Elev (ft)	Bot of Ftg Elev (ft)	Ftg Thickness (ft)	Stepped Ftg?	Ftg Length (ft)	Ftg Width (ft)
BBR1	8	54.525	32+35.000	32+89.525	290.784	292.307	291.545	283.040	1.333	no	54.525	7.25
BBL1	10	24.000	32+35.000	32+59.000	290.784	291.573	291.178	281.960	1.333	no	24.000	7.583
BBL2	10	33.675	32+59.000	32+92.675	291.573	292.366	291.969	281.960	1.333	no	33.675	7.583
EBR1	8	50.000	34+09.601	34+59.601	292.268	291.517	291.893	283.490	1.333	no	50.000	7.25
EBR2	6	40.399	34+59.601	35+00.000	291.517	289.206	290.362	283.490	1.333	no	40.399	7
EBL1	8	16.202	34+10.798	34+27.000	292.244	291.875	292.059	282.200	1.333	no	16.202	7.25
EBL2	8	33.798	34+27.000	34+60.798	291.875	290.832	291.353	282.200	1.333	no	33.798	7.25
EBL3	8	14.202	34+60.798	34+75.000	290.832	290.283	290.557	282.200	1.333	no	14.202	7.25
											266.80	
												266.80

G Street Overcrossing

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/6/12

STRUCTURAL CONCRETE (continued)

Area of haunch = 0 ft²
 Depth of haunch = 0 ft
 Top of stem/bottom of haunch width = 1.083 ft

Panel No.	Design Height	1. Ftg Volume (ft ³)	Key?	2. Key Volume (ft ³)	3. Haunch Volume (ft ³)	Panel Height at Begin Wall (ft)	Panel Height at End Wall (ft)	Avg Panel Height (ft)	Avg Bot of Stem width (ft)	4. Stem Vol (ft ³)
BBR1	8	526.94	yes	48.51	0.00	6.411	7.934	7.172	1.382	482.10
BBL1	10	242.60	yes	21.35	0.00	7.491	8.280	7.885	1.412	236.11
BBL2	10	340.39	yes	29.96	0.00	8.280	9.073	8.676	1.445	369.33
EBR1	8	483.21	yes	44.49	0.00	7.445	6.694	7.070	1.378	435.00
EBR2	6	376.96	yes	35.95	0.00	6.694	4.383	5.539	1.314	268.24
EBL1	8	156.58	yes	14.42	0.00	8.711	8.342	8.526	1.439	174.20
EBL2	8	326.63	yes	30.07	0.00	8.342	7.299	7.820	1.409	329.40
EBL3	8	137.25	yes	12.64	0.00	7.299	6.750	7.024	1.376	122.67
		2591 cft 96 CY		237 cft 9 CY	0 cft 0 CY					2417 cft 90 CY 79 CY

G Street Overcrossing

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/6/12

STRUCTURAL CONCRETE (continued)

Panel No.	Stepped Ftg?	Ftg Width (ft)	Bot of Ftg Elev (ft)	Ftg Thickness (ft)	5. Ftg Step Volume (ft ³)	Total Structure Concrete Volume (1+2+3+4+5) (ft ³)	
BBR1	no	7.25	283.04	1.33	0.00	1057.56	39.2 CY
BBL1	no	7.583	281.96	1.33	0.00	500.06	18.5 CY
BBL2	no	7.583	281.96	1.33	0.00	739.69	27.4 CY
EBR1	no	7.25	283.49	1.33	0.00	962.70	35.7 CY
EBR2	no	7	283.49	1.33	0.00	681.15	25.2 CY
EBL1	no	7.25	282.20	1.33	0.00	345.19	12.8 CY
EBL2	no	7.25	282.20	1.33	0.00	686.11	25.4 CY
EBL3	no	7.25	282.20	1.33	0.00	272.56	10.1 CY
					0 cft	5439 cft	201 CY
					0 CY		

G Street Overcrossing

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/6/12

EARTHWORK

Limits of excavation extended	1.000 ft	
Cover over footing	1.500 ft	<--- See Std Plan B3-8
Depth of roadway section behind wall	1.500 ft	
Depth of roadway section in front of wall	0.000 ft	

Panel No.	Design Height	Begin Station	End Station	OG Elev at Begin Station	OG Elev at End Station	FG Elev at Front of Wall at Begin Station	FG Elev at Front of Wall at End of Station	Width of Exc. (ft)	Exc. Volume (ft ³)		
BBR1	8.000	32+35.000	32+89.525	286.50	285.24	286.25	286.25	9.250	1476.90	54.70	71.65
BBL1	10.000	32+35.000	32+59.000	286.50	286.03	286.25	286.25	9.583	1010.92	37.44	33.49
BBL2	10.000	32+59.000	32+92.675	286.03	285.18	286.25	286.25	9.583	1204.72	44.62	67.69
EBR1	8.000	34+09.601	34+59.601	284.84	285.66	286.25	286.25	9.250	857.96	31.78	38.59
EBR2	6.000	34+59.601	35+00.000	285.66	286.82	286.25	286.25	9.000	1036.28	38.38	72.85
EBL1	8.000	34+10.798	34+27.000	284.86	285.30	286.25	286.25	9.250	446.01	16.52	32.82
EBL2	8.000	34+27.000	34+60.798	285.30	285.85	286.25	286.25	9.250	1084.63	40.17	36.73
EBL3	8.000	34+60.798	34+75.000	285.85	286.36	286.25	286.25	9.250	525.32	19.46	35.28

7,643
283 CY

G Street Overcrossing

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/6/12

Panel No.	Front FG Volume (ft ³)	Subtract Concrete Volume (ft ³)	Backfill Volume up to front FG (ft ³)	Backfill Volume from front FG to back FG (ft ³)	Height of Addn't backfill at wall ends	Length of Addn'l backfill	Addn't backfill at wall ends	Backfill Volume (ft ³)
BBR1	1,619	653	966	987	5.30	8.53	45	1,998
BBL1	987	331	656	412	4.93	8.29	41	1,108
BBL2	1,384	466	918	708	5.72	8.81	50	1,677
EBR1	1,276	571	705	988	5.64	8.76	49	1,743
EBR2	1,004	446	557	480	4.11	7.74	32	1,070
EBL1	607	212	395	331	5.81	8.87	52	777
EBL2	1,266	441	825	579	5.10	8.40	43	1,447
EBL3	532	185	347	190	4.31	7.87	34	571

10,391
385 CY

G Street Overcrossing

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/6/12

PERVIOUS BACKFILL MATERIAL

Thickness of PBM: 1.000 ft
 Depth of cover to PBM: 3.000 ft
 Dimension from weep hole to FG (at front of wall) 0.250 ft

<---See Std Plan B0-3, Detail 3-1
 <---See Std Plan B0-3, Detail 3-1
 <---See Std Plan B0-3, Note A.

Panel No.	Top of PBM Elev (ft)	Bot of PBM Elev (ft)	Length of Panel (ft)	Vol of PBM (ft ³)
BBR1	288.545	286.750	54.525	97.895
BBL1	288.178	286.750	24.000	34.280
BBL2	288.969	286.750	33.675	74.734
EBR1	288.893	286.750	50.000	107.132
EBR2	287.362	286.750	40.399	24.723
EBL1	289.059	286.750	16.202	37.418
EBL2	288.353	286.750	33.798	54.190
EBL3	287.557	286.750	14.202	11.466
	2306.92	2294.00	266.80	441.84
				16 CY

G Street Overcrossing

STRUCTURE G Street Overcrossing			BRIDGE NO. 42C 0669	CALC BY D. Nguyen-Tan
DIST 6	COUNTY Fre	ROUTE 99	EA 06-2HT20	DATE 5/6/12

AESTHETIC TREATMENT

Depth below FG that Aesthetic treatment ends =

1.000 ft

Panel No.	Avg FG Elev. At Begin Wall (ft)	Avg FG Elev. At End Wall (ft)	Avg Height of treatment (ft)	Length of treatment (ft)	Reduction at wall ends	Area of Texture (ft ²)
BBR1	286.250	286.250	6.295	54.525	0.000	343.257
BBL1	286.250	286.250	5.928	24.000	0.000	142.280
BBL2	286.250	286.250	6.719	33.675	0.000	226.272
EBR1	286.250	286.250	6.643	50.000	0.000	332.132
EBR2	286.250	286.250	5.112	40.399	0.000	206.519
EBL1	286.250	286.250	6.809	16.202	0.000	110.327
EBL2	286.250	286.250	6.103	33.798	0.000	206.281
EBL3	286.250	286.250	5.307	14.202	0.000	75.375

1642 SQFT

BAR REINFORCING STEEL

Superstr Width 70 Rebar Clr 0.167
Superstr Length 101.1

STRUCTURE G Street Overcrossing					BRIDGE NO. 42C 0669						NAME D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size										
					3	4	5	6	7	8	9	10	11	14	18
TS-0601	#6 Cont over each void	6	33	100.77				3325							
TS-0602	#6 Cont, Tot 2 per stirrup	6	68	100.77				6852							
TS-0603	#6 Cont, Tot 2 per stirrup	6	68	100.77				6852							
TS-1004	#10 Cont, Tot 4	10	8	100.77								806.1			
TS-0405	#4 Cont, Typ	4	2	100.77		202									
TS-1006	#10 Cont, Tot 2	10	4	100.77								403.1			
TS-0607	#6 Cont, per stirrup	6	34	100.77				3426							
TS-0608	#6 Cont, 3 per stirrup	6	102	100.77				10278							
TS-0509	#5 @ 12	5	97	69.67			6758								
TS-0310	#3 @ 3'-0"	3	31	69.67	2160										
TS-0511	#5 @ 12	5	92	67.50			6210								
TS-0512	#5 U @ 12	5	204	4.67			952								
TS-0513	#5 L @ 12	5	204	3.67			748								
TS-0414	#4 arc @ 12	4	204	2.14		437									
TS-0415	#4 U stirrup	4	3128	4.54		14186									
TR-0818	#8 @ 12, Top Slab Reinf	8	70	25.00						1750					
BR-0819	#8 @ 12, Bottom Slab Reinf	8	72	20.00						1440					
BD-1020	#10, Tot 24 in 8 bundles	10	24	69.67								1672			
BD-1021	#10, Tot 16 in 8 bundles	10	16	64.63								1034			
BD-1022	#10, Tot 5	10	5	66.96								334.8			
BD-0524	#5 Bent cap stirrups	5	64	22.17			1419								
		Total Lengths			2160	14825	16086	30734		3190		4250			
		(lb/ft)			0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.60
		Total Wt. Per Size			812	9903	16778	46162		8517		18288			

BAR REINFORCING STEEL

STRUCTURE G Street Overcrossing					BRIDGE NO. 42C 0669						NAME D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size										
					3	4	5	6	7	8	9	10	11	14	18
AD-0725	#7, Tot 5	7	10	69.67					697						
AD-0726	#7, Tot 5	7	10	66.59					666						
AD-0427	#4, Tot 4	4	8	69.67		557									
AD-0628	#6 Cont L @ 12	6	142	7.00				994							
AD-0529	#5 Ties @ 12	5	136	10.67			1451								
GD-0430a	#4 @ 4 Grillage, Vertical	4	197	3.00		591									
GD-0430b	#4 @ 4 Grillage, Horizontal	4	11	65.00		715									
GD-0431	#4 L @ 12	4	96	7.33		704									
GD-0632	#6 U @ 4	6	10	8.00				80							
GD-0433	#4, Tot 4	4	128	3.17		405									
BD-0463	#4 in Bent Cap	4	40	2.92		117									
BD-0464	#4 in Bent Cap	4	6	70.00		420									
BD-0465	#4 in bent cap	4	20	9.75		195									
BD-0466	#4 radius bar in bent cap	4	142	3.31		470									

BAR REINFORCING STEEL

Column 1 Length 17.21
Column 2 Length 18.7

Column 3 Length 19.66
Column 4 Length 20.31

Footing Thickness 3

STRUCTURE					BRIDGE NO.						NAME				
G Street Overcrossing					42C 0669						D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size										
					3	4	5	6	7	8	9	10	11	14	18
BD-0653-1	#6 Main Col Reinf, Column 1	6	16	20.11				322							
BD-0653-2	#6 Main Col Reinf, Column 2	6	16	21.56				345							
BD-0653-3	#6 Main Col Reinf, Column 3	6	16	22.56				361							
BD-0653-4	#6 Main Col Reinf, Column 4	6	16	23.21				371							
BD-0454-1	#4 Tot 4, Column 1	4	4	19.11		76									
BD-0454-2	#4 Tot 4, Column 2	4	4	20.56		82									
BD-0454-3	#4 Tot 4, Column 3	4	4	21.56		86									
BD-0454-4	#4 Tot 4, Column 4	4	4	22.21		89									
BD-0755-1	#7 Hoops @ 7, Column 1	7	34	6.81					231						
BD-0755-2	#7 Hoops @ 7, Column 2	7	36	6.81					245						
BD-0755-3	#7 Hoops @ 7, Column 3	7	38	6.81					259						
BD-0755-4	#7 Hoops @ 7, Column 4	7	39	6.81					265						
BD-0456-1	#4 hairpin, Column 1	4	76	2.80		213									
BD-0456-2	#4 hairpin, Column 2	4	80	2.80		224									
BD-0456-3	#4 hairpin, Column 3	4	84	2.80		235									
BD-0456-4	#4 hairpin, Column 4	4	88	2.80		246									
BD-0456b	#4 ties for architectural shape	4	304	2.79		847									
BD-0657	#6 Tot 5, Galvanized	6	20	5.17				103							
BD-0458	#4 Spiral @ 4	4	68	4.06		276									
BD-0859	#8 @ 12	8	60	13.50						810					
BD-0860	#8 @ 12	8	60	13.50						810					
BD-1061	#8 @ 12	10	60	13.50								810			
BD-1062	#10 @ 12	10	60	13.50								810			
BD-0562a	Alternating hooks	5	864	3.50			3024								
		Total Lengths				2375	3024	1502	1000	1620		1620			
		(lb/ft)			0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.60
		Total Wt. Per Size				1586	3154	2256	2045	4325		6971			

BAR REINFORCING STEEL

Abutment Width 70.00
Abut 1 Stem Length 14.13

Abut 3 Stem Length 13.81
Backwall height 3.63

STRUCTURE					BRIDGE NO.						NAME				
G Street Overcrossing					42C 0669						D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size										
					3	4	5	6	7	8	9	10	11	14	18
AL-0433	#4 @ 12 backwall	4	142	1.42		201									
AL-0434	#4 x 4'-6" @ 12	4	142	4.50		639									
AL-0535	#5 @ 12	5	134	4.17			558								
AL-0936-1	#9 L @ 12, Abut 1	9	71	24.90							1768				
AL-0936-3	#9 L @ 12, Abut 3	9	71	24.58							1745				
AL-0437	#4 @ 12	4	142	16.55		2350									
AL-0838	#8 @ 12 in Abut Ftgs	8	142	13.00						1846					
AL-0539	#5 x 10'-6" @ 12	5	142	10.50			1491								
AL-0440	#4, Tot 8 in backwall	4	16	69.67		1115									
AL-0441	#4, Tot 9 on stem seat	4	18	69.67		1254									
AL-0442	#4 @ 12 in stems	4	60	69.67		4180									
AL-0443	#4 @ 12 in footings	4	56	69.67		3901									
AD-0944	#9 L, Tot 9	9	18	6.08							109				
AD-0945	#9	9	4	3.00							12				
AD-0446	#4, Tot 4 per shear key	4	16	3.17		51									
AD-0447	#4 shear key reinf	4	16	10.00		160									
AD-0447a	#4 Embed into footing	4	40	16.80		672									
AD-0447b	#4 top "capping" reinf in shear key	4	16	1.92		31									
AD-1148	#11, Tot 2	11	8	7.67									61.33		
AD-0449	Not considered because bottom of wall is ho	4													
AD-0450	#4 @ 18 outside face	4	52	10.17		529									
AD-0751	#7 @ 9 inside face	7	100	10.17					1017						
AD-0452	#4 U @ 18	4	24	28.27		678									
BD-0456c	Vertical #4 bars in columns	4	40	18.96		759									
		Total Lengths				16520	2049		1017	1846	3635		61		
		(lb/ft)			0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.60
		Total Wt. Per Size				11035	2137		2078	4929	12359		326		

Marginal Estimate 053012.xlsx - Substructure Bar Reinf 2

[Date] - 3:24 PM

Caltrans

BAR REINFORCING STEEL

Abutment Width 70.00 Abut 3 Stem Length 13.81
 Abut 1 Stem Length 14.13 Backwall height 3.63

STRUCTURE G Street Overcrossing					BRIDGE NO. 42C 0669						NAME D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size										
					3	4	5	6	7	8	9	10	11	14	18
AD-0470		4	12	3.50		42									

Type 1 Case 1 Template

BBR1

STRUCTURE					BRIDGE NO.					NAME				
G Street Overcrossing					42C 0669					D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size									
					4	5	6	7	8	9	10	11	14	18
	"a" bars													
	"b" bars													
	"c" bars	6	73	10.54			770							
	Short "c" bars													
	"d" bars	6	73	5.81			424							
	Zone 1 "s" bars	5	4	54.52		218								
	Zone 2 "s" bars	5	3	54.52		164								
	Zone 1 "t" bars	4	4	54.52	218									
	Zone 2 "t" bars	4	3	54.52	164									
	"e" bars	6	20	15.00			300							
	"f" bars - #5 @ 12 or #6 @ 12	5	6	54.52		327								
	"g" bars - #5 Tot 4	5	4	54.52		218								
	"h" bars - #5 @ 12 or #6 @ 12	5	8	54.52		436								
	"i" bars - #5 @ "S"	5	73	5.22		381								
	"j" bars - #5 @ 12	5	55	7.33		403								
	"k" bars - #5 @ "S"	5	73	3.00		219								
		Total Lengths			382	2366	1493							
		(lb/ft)			0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.60
		Total Wt. Per Size			255	2468	2243							

Type 1 Case 1 Template

BBL1

STRUCTURE					BRIDGE NO.					NAME				
G Street Overcrossing					42C 0669					D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size									
					4	5	6	7	8	9	10	11	14	18
	"a" bars													
	"b" bars													
	"c" bars	6	32	11.73			376							
	Short "c" bars													
	"d" bars	6	32	6.03			193							
	Zone 1 "s" bars	5	4	24.00		96								
	Zone 2 "s" bars	5	3	24.00		72								
	Zone 1 "t" bars	4	4	24.00	96									
	Zone 2 "t" bars	4	3	24.00	72									
	"e" bars	6	10	15.00			150							
	"f" bars - #5 @ 12 or #6 @ 12	5	6	24.00		144								
	"g" bars - #5 Tot 4	5	4	24.00		96								
	"h" bars - #5 @ 12 or #6 @ 12	5	8	24.00		192								
	"i" bars - #5 @ "S"	5	32	5.44		174								
	"j" bars - #5 @ 12	5	24	8.41		202								
	"k" bars - #5 @ "S"	5	32	3.08		99								
		Total Lengths			168	1074	718							
		(lb/ft)			0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.60
		Total Wt. Per Size			112	1121	1079							

Type 1 Case 1 Template

BBL2

STRUCTURE G Street Overcrossing					BRIDGE NO. 42C 0669					NAME D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size									
					4	5	6	7	8	9	10	11	14	18
	"a" bars													
	"b" bars													
	"c" bars	6	45	12.56			565							
	Short "c" bars													
	"d" bars	6	45	5.99			270							
	Zone 1 "s" bars	5	4	33.68		135								
	Zone 2 "s" bars	5	3	33.68		101								
	Zone 1 "t" bars	4	4	33.68	135									
	Zone 2 "t" bars	4	3	33.68	101									
	"e" bars	6	10	15.00			150							
	"f" bars - #5 @ 12 or #6 @ 12	5	6	33.68		202								
	"g" bars - #5 Tot 4	5	4	33.68		135								
	"h" bars - #5 @ 12 or #6 @ 12	5	8	33.68		269								
	"i" bars - #5 @ "S"	5	45	5.41		243								
	"j" bars - #5 @ 12	5	34	9.20		313								
	"k" bars - #5 @ "S"	5	45	3.08		139								
		Total Lengths			236	1537	985							
		(lb/ft)			0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.60
		Total Wt. Per Size			157	1603	1479							

Type 1 Case 1 Template

EBR1

STRUCTURE G Street Overcrossing					BRIDGE NO. 42C 0669					NAME D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size									
					4	5	6	7	8	9	10	11	14	18
	"a" bars													
	"b" bars													
	"c" bars	6	67	11.57			775							
	Short "c" bars													
	"d" bars	6	67	5.81			389							
	Zone 1 "s" bars	5	4	50.00		200								
	Zone 2 "s" bars	5	3	50.00		150								
	Zone 1 "t" bars	4	4	50.00	200									
	Zone 2 "t" bars	4	3	50.00	150									
	"e" bars	6	10	15.00			150							
	"f" bars - #5 @ 12 or #6 @ 12	5	6	50.00		300								
	"g" bars - #5 Tot 4	5	4	50.00		200								
	"h" bars - #5 @ 12 or #6 @ 12	5	8	50.00		400								
	"i" bars - #5 @ "S"	5	67	5.22		350								
	"j" bars - #5 @ 12	5	50	8.36		418								
	"k" bars - #5 @ "S"	5	67	3.00		201								
		Total Lengths			350	2219	1315							
		(lb/ft)			0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.60
		Total Wt. Per Size			234	2314	1974							

Type 1 Case 1 Template

EBR2

STRUCTURE					BRIDGE NO.					NAME				
G Street Overcrossing					42C 0669					D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size									
					4	5	6	7	8	9	10	11	14	18
	"a" bars													
	"b" bars													
	"c" bars	6	54	10.76			581							
	Short "c" bars													
	"d" bars	5	54	5.26		284								
	Zone 1 "s" bars	5	4	40.40		162								
	Zone 2 "s" bars	5	3	40.40		121								
	Zone 1 "t" bars	4	4	40.40	162									
	Zone 2 "t" bars	4	3	40.40	121									
	"e" bars	6	10	15.00			150							
	"f" bars - #5 @ 12 or #6 @ 12	5	6	40.40		242								
	"g" bars - #5 Tot 4	5	4	40.40		162								
	"h" bars - #5 @ 12 or #6 @ 12	5	8	40.40		323								
	"i" bars - #5 @ "S"	5	54	5.04		272								
	"j" bars - #5 @ 12	5	41	7.61		312								
	"k" bars - #5 @ "S"	5	54	3.00		162								
		Total Lengths			283	2040	731							
		(lb/ft)			0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.60
		Total Wt. Per Size			189	2128	1098							

Type 1 Case 1 Template

EBL1

STRUCTURE G Street Overcrossing					BRIDGE NO. 42C 0669					NAME D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size									
					4	5	6	7	8	9	10	11	14	18
	"a" bars													
	"b" bars													
	"c" bars	6	22	12.90			284							
	Short "c" bars													
	"d" bars	6	22	5.75			126							
	Zone 1 "s" bars	5	4	16.20		65								
	Zone 2 "s" bars	5	3	16.20		49								
	Zone 1 "t" bars	4	4	16.20	65									
	Zone 2 "t" bars	4	3	16.20	49									
	"e" bars	6	10	15.00			150							
	"f" bars - #5 @ 12 or #6 @ 12	5	6	16.20		97								
	"g" bars - #5 Tot 4	5	4	16.20		65								
	"h" bars - #5 @ 12 or #6 @ 12	5	8	16.20		130								
	"i" bars - #5 @ "S"	5	22	5.16		114								
	"j" bars - #5 @ 12	5	17	9.63		164								
	"k" bars - #5 @ "S"	5	22	3.00		66								
		Total Lengths			113	748	560							
		(lb/ft)			0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.60
		Total Wt. Per Size			76	780	841							

Type 1 Case 1 Template

EBL2

STRUCTURE					BRIDGE NO.					NAME				
G Street Overcrossing					42C 0669					D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size									
					4	5	6	7	8	9	10	11	14	18
	"a" bars													
	"b" bars													
	"c" bars	6	46	12.50			575							
	Short "c" bars													
	"d" bars	6	46	5.78			266							
	Zone 1 "s" bars	5	4	33.80		135								
	Zone 2 "s" bars	5	3	33.80		101								
	Zone 1 "t" bars	4	4	33.80	135									
	Zone 2 "t" bars	4	3	33.80	101									
	"e" bars	6		15.00										
	"f" bars - #5 @ 12 or #6 @ 12	5	6	33.80		203								
	"g" bars - #5 Tot 4	5	4	33.80		135								
	"h" bars - #5 @ 12 or #6 @ 12	5	8	33.80		270								
	"i" bars - #5 @ "S"	5	46	5.19		239								
	"j" bars - #5 @ 12	5	34	9.26		315								
	"k" bars - #5 @ "S"	5	46	3.00		138								

Type 1 Case 1 Template

EBL3

STRUCTURE G Street Overcrossing					BRIDGE NO. 42C 0669					NAME D. Nguyen-Tan				
CODE	ITEM	SIZE	No.of Bars	Length to 1/100 ft	Total Length - Each Size									
					4	5	6	7	8	9	10	11	14	18
	"a" bars													
	"b" bars													
	"c" bars	6	19	11.42			217							
	Short "c" bars													
	"d" bars	6	19	5.81			110							
	Zone 1 "s" bars	5	4	14.20		57								
	Zone 2 "s" bars	5	3	14.20		43								
	Zone 1 "t" bars	4	4	14.20	57									
	Zone 2 "t" bars	4	3	14.20	43									
	"e" bars	6	10	15.00			150							
	"f" bars - #5 @ 12 or #6 @ 12	5	6	14.20		85								
	"g" bars - #5 Tot 4	5	4	14.20		57								
	"h" bars - #5 @ 12 or #6 @ 12	5	8	14.20		114								
	"i" bars - #5 @ "S"	5	19	5.22		99								
	"j" bars - #5 @ 12	5	15	8.21		123								
	"k" bars - #5 @ "S"	5	19	3.00		57								
		Total Lengths			99	635	477							
		(lb/ft)			0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.60
		Total Wt. Per Size			66	662	717							

Abutment Excavation and Backfill					
Abutment 1 Elevation (footing)				273.75	ft
Abutment 1 Top Elevation				293.17	ft
Abutment 3 Elevation (footing)				274	ft
Abutment 3 Top Elevation				293.1	ft
Ave Height From BB BOF				19.26	ft
Abutment Footing				1.67	ft
Length of RW 1				69.17	ft
Length of RW 2				71.23	ft
Abutment 1 Elevation Front				280	ft
Abutment 1 Elevation Back				292	ft (OG)
Abutment 3 Elevation Front				279	ft
Abutment 3 Elevation Back				292	ft OG
		Length (ft)	Width (ft)	Ave Height (ft)	Vol (cy)
EXAVATION	Abutment1	69.17	15.5	18.25	724.68
	key A1	69.17	2	1	5.12
					729.81
	Abutment3	71.23	15.5	18	736.04
	key A3	71.23	2	1	5.28
					741.32
Structure Excavation, Bridge =			1471	cy	
		Length	Width	Height	
BACKFILL	Abutment 1 Back	69.17	8	16.58	339.87
	Abutment 1 Front	69.17	4	4.58	46.97
	1 foot add	69.17	2	1.67	8.54
					395.38
	Abutment 3 Back	71.23	8	16.33	344.72
	Abutment 3 Front	71.23	4	3.33	35.18
	1 foot add	71.23	2	1.67	8.54
					388.43
Structure Backfill, Bridge =			783.81	cy	

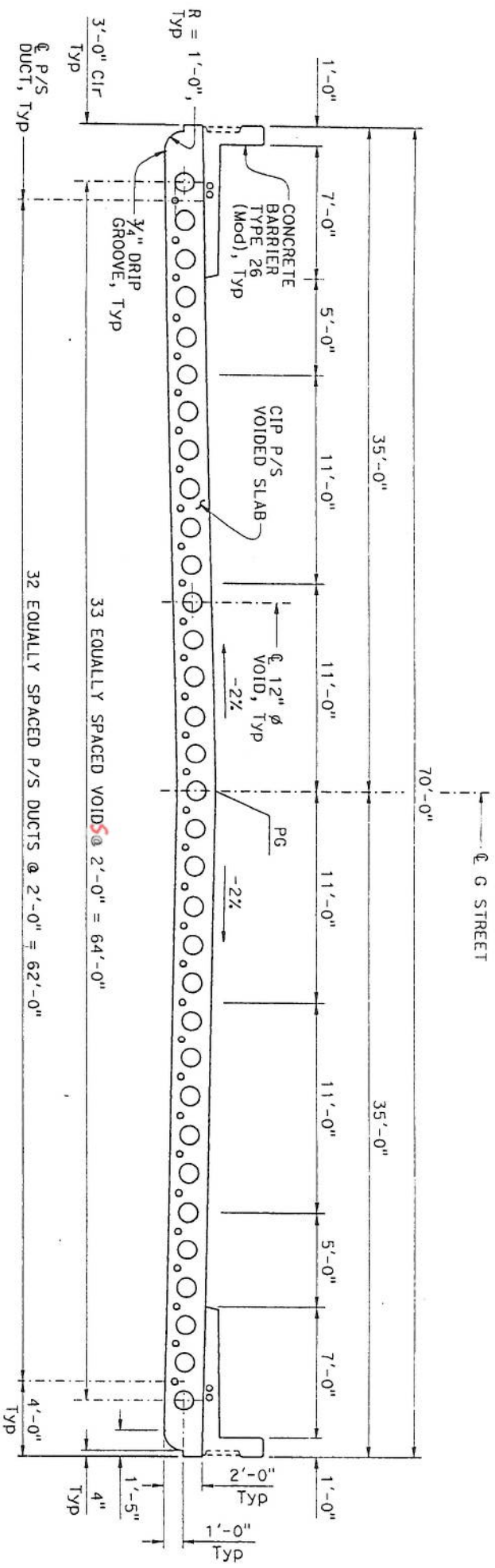
PREPARE AND STAIN CONCRETE, G STREET OC (At wing walls)					Page 1 of 1				
				AREA 1 (sqft)	AREA 1A (sqft)	AREA 3 (sqft)	AREA 4 (sqft)		AREA (sqft)
G STREET OC				254.30	246.00	317.30	243.50		1061.10
				Height (ft)	Approx Length Each (4 faces) (ft)	Approx Length Each (2 faces) (ft)	# Columns		AREA (sqft)
G STREET OC BENT				4.42	2	2.75	4.00		238.50

TOTAL G STREET OC = 1300 sqft

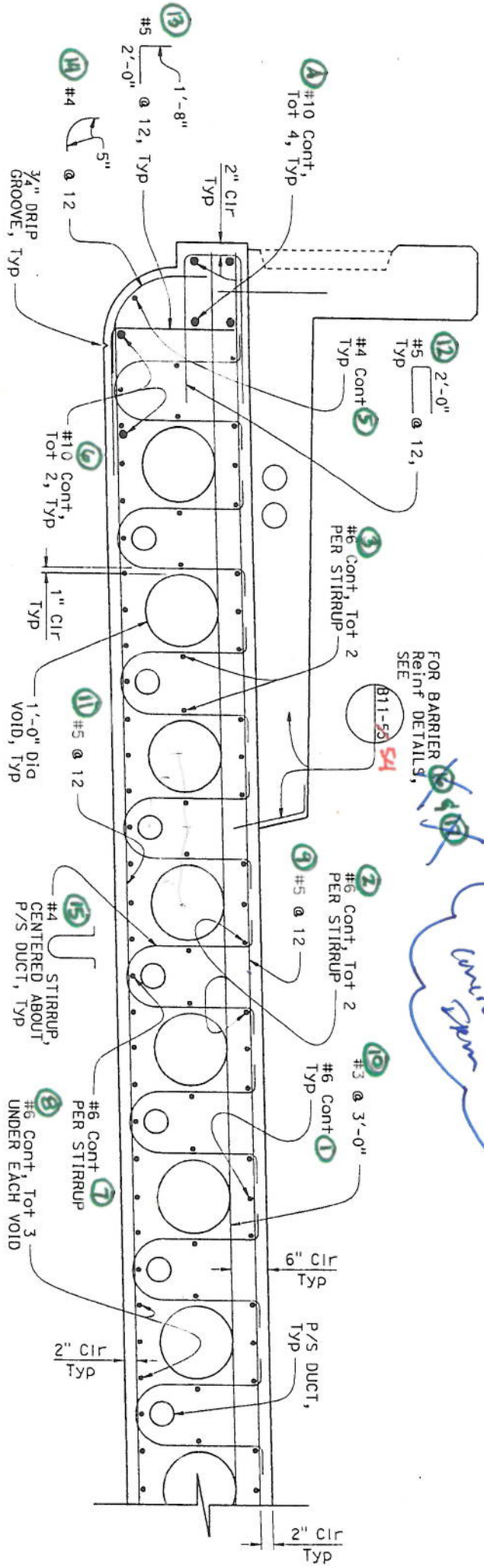
DIST	COUNTY	ROUTE	TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre	99			

REGISTERED CIVIL ENGINEER	DATE	X
RICHARD WELKO	No. 01617	
PLANS APPROVAL DATE	EXP. 06/20/13	
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.		

NOTE:
Bridge is symmetrical about C.G. Street



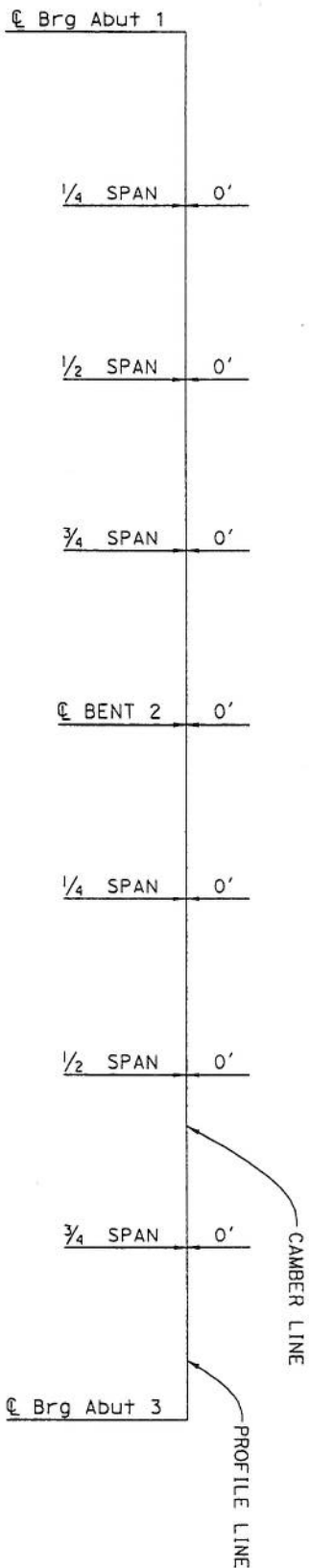
TYPICAL SECTION
1/4" = 1'-0"



PART TYPICAL SECTION
1" = 1'-0"

STRUCTURES DESIGN SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY DAVID ALVAREZ	CHECKED	HILARIO TIAZON	STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES	BRIDGE NO.	12C00669	G STREET OVERCROSSING
	DETAILS	BY SUSAN NG	CHECKED	DAVID ALVAREZ	DESIGN BRANCH 6	STRUCTURE DESIGN	POST DATE	20.74	TYPICAL SECTION
	QUANTITIES	BY DAVID ALVAREZ	CHECKED	HILARIO TIAZON	DEPARTMENT OF TRANSPORTATION	PROJECT NUMBER & PHASE: 06120002.39-1	CONTRACT NO.: 06-2H1201		
						UNIT: 3591			
						PROJECT NUMBER & PHASE: 06120002.39-1			
						CONTRACT NO.: 06-2H1201			
						DISREGARD PRINTS DEARING			
						EARLIER REVISION DATES			
						DATE			
						1.4			
						2.5			

REGISTERED CIVIL ENGINEER DATE X
RICHARD MELIX
No. C 61617
Exp. 06/30/13
PLANS APPROVAL DATE
The State of California or its officers or agents
shall not be responsible for the accuracy or
completeness of electronic copies of this plan sheet.



DOES NOT INCLUDE ALLOWANCE FOR FALSEWORK SETTLEMENT

CAMBER DIAGRAM
NO SCALE

PRESTRESSING NOTES

270 KSI Low Relaxation Strand: 1500

P_j Jack = 1000 kips

Anchor Set = .37 in

Total Number of Ducts = 31 32

Distribution of prestress force (P_jjack) between
Ducts shall not exceed the ratio of 3:2.

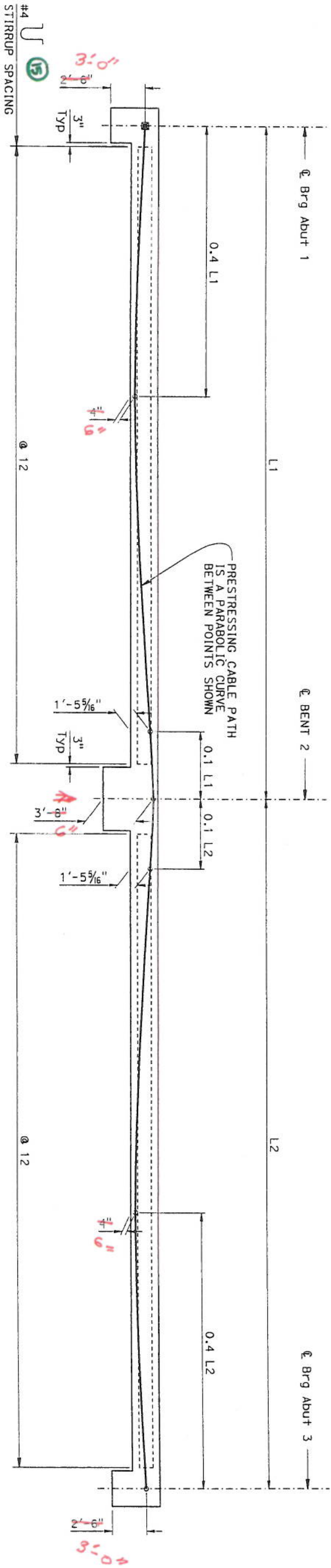
Concrete: f'_c = 5000 psi @ 28 days

f'_{ci} = 4000 psi @ time of stressing

Contractor shall submit elongation calculations
based on initial stress at

Ø = 0.9297 times jacking stress.

One end stressing shall be performed from
Abutment 3



Note:
Indicates theoretical point of no
movement for one end stressing

LONGITUDINAL SECTION
1/4" = 1'-0"

DESIGN	BY DAVID ALVAREZ	CHECKED HILARIO JUAZON	STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. 4200669	POST MILE 20.74	CONTRACT NO. 06-2HT201	DISSEMINATION BEARING	DATE	SHEET 16	OF 25
DETAILS	BY SUSAN NG	CHECKED DAVID ALVAREZ	DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH 6				EXAMINER	DATE		
QUANTITIES	BY DAVID ALVAREZ	CHECKED HILARIO JUAZON									

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

FILE -> 3200669-1-1000-2001-1000

USERNAME => 4120745 DATE PLOTTED => 07-MAY-2012 TIME PLOTTED => 15:58

DATE COUNTY ROUTE POST MILES SHEET TOTAL
NO. PROJECT NO. SHEETS

REGISTERED CIVIL ENGINEER

May 20, 2011

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS
OR AGENTS SHALL NOT BE RESPONSIBLE FOR
OR AGENTS SHALL NOT BE RESPONSIBLE FOR
COPIES OF THIS PLAN SHEET.

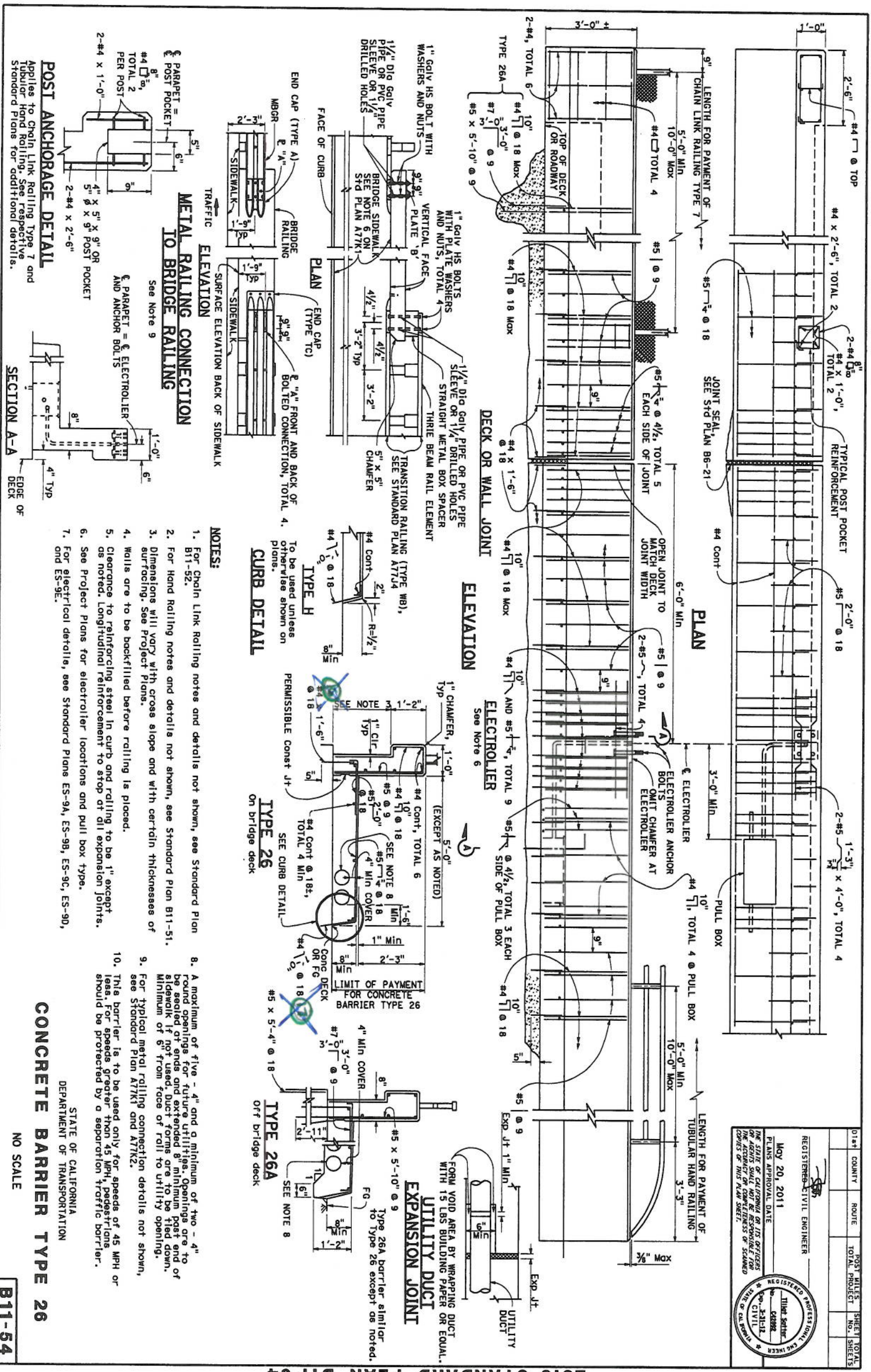
REGISTERED PROFESSIONAL ENGINEER

TILLER SUTHER

2-3112

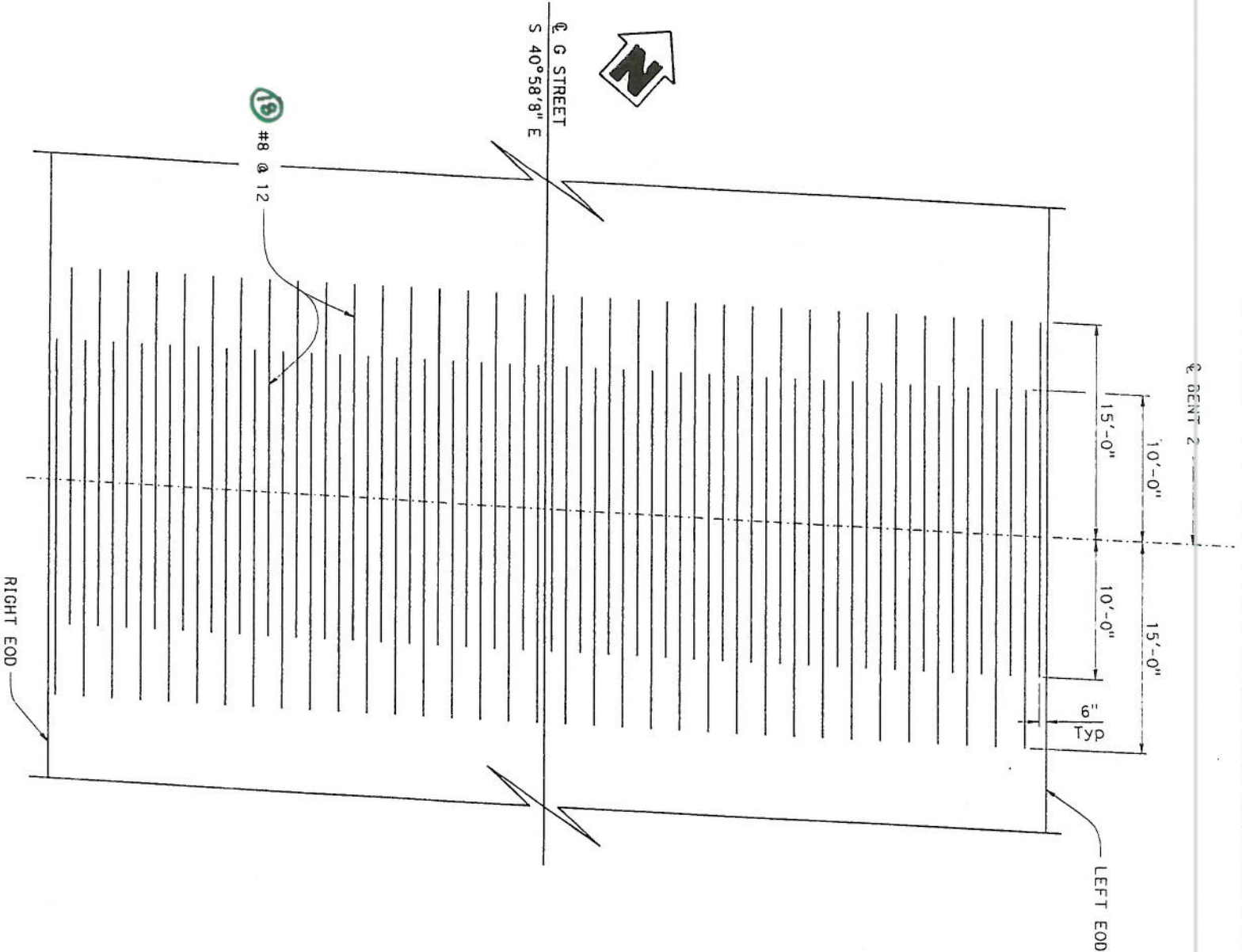
CIVIL

STATE OF CALIFORNIA



LIST	COUNTY	ROUTE	TOTAL PROJECT	SHEETS
06	FRE	99		25

REGISTERED CIVIL ENGINEER	DATE	X
RICHARD DELKO No. C 61617 Exp. 06/30/13 STATE OF CALIFORNIA		
PLANS APPROVAL DATE		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.		



ADDITIONAL TOP SLAB REINFORCEMENT

3/8" = 1'-0"

DESIGN	DAVID ALVAREZ	CHECKED	HILARIO TIAZON
DETAILS	SUSAN NG	CHECKED	DAVID ALVAREZ
QUANTITIES	DAVID ALVAREZ	CHECKED	HILARIO TIAZON

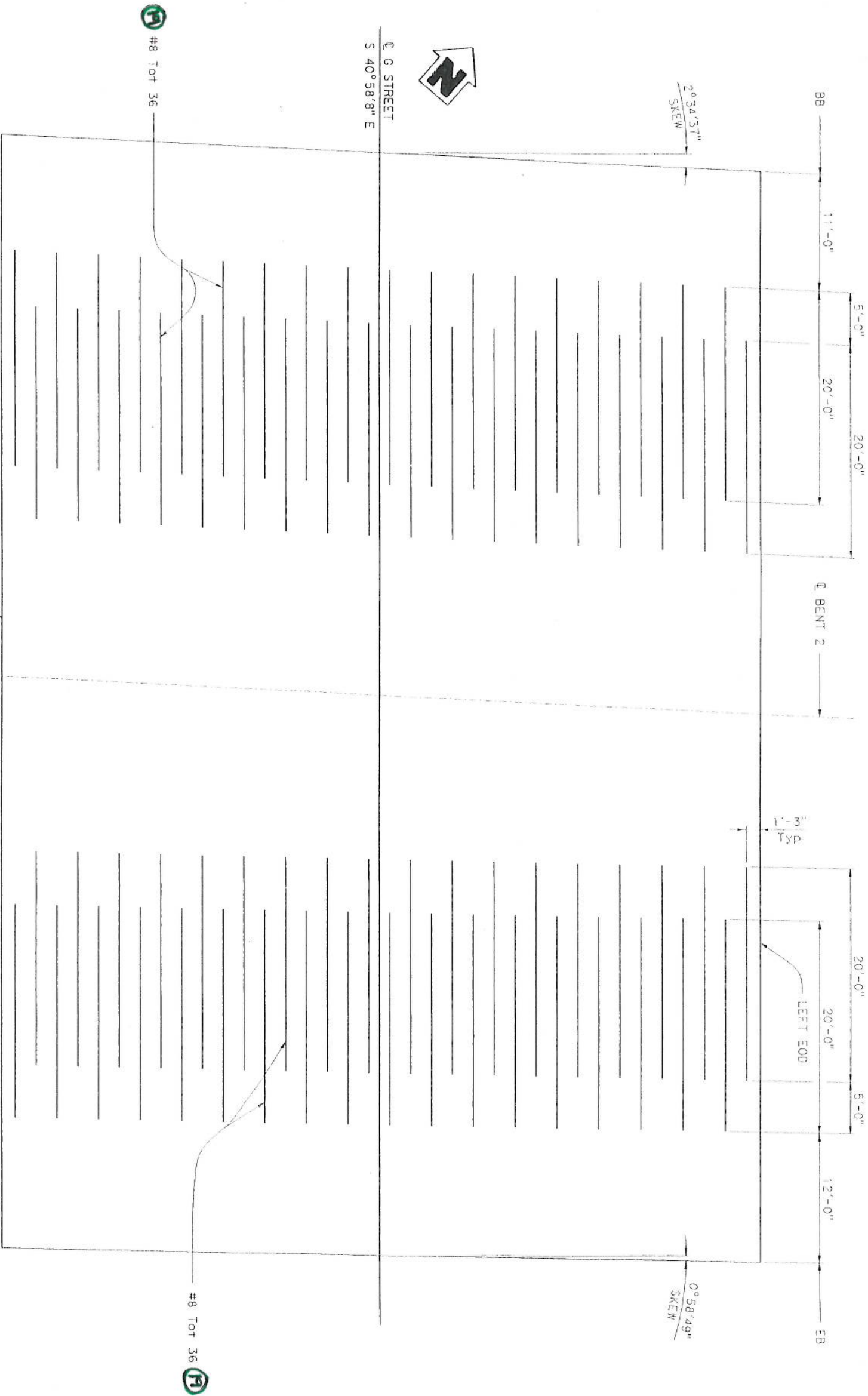
STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES	UNIT: 3591
DEPARTMENT OF TRANSPORTATION	STRUCTURE DESIGN	PROJECT NUMBER & PHASE: 0612000239-1
	DESIGN BRANCH 6	CONTRACT NO.: 06-2HTC01

DESIGN NO.	42C0669	DATE	07-01-10
PROJECT NO.	20.74	DATE	07-01-10

G STREET OVERCROSSING	TOP SLAB REINFORCEMENT
-----------------------	------------------------

DIST	COUNTY	ROUTE	TOTAL PROJECT	SHEETS
06	Fresno	99		

REGISTERED CIVIL ENGINEER	DATE	X
RICHARD DELKO No. C 61617 CIVIL		
PLANS APPROVAL DATE		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.		



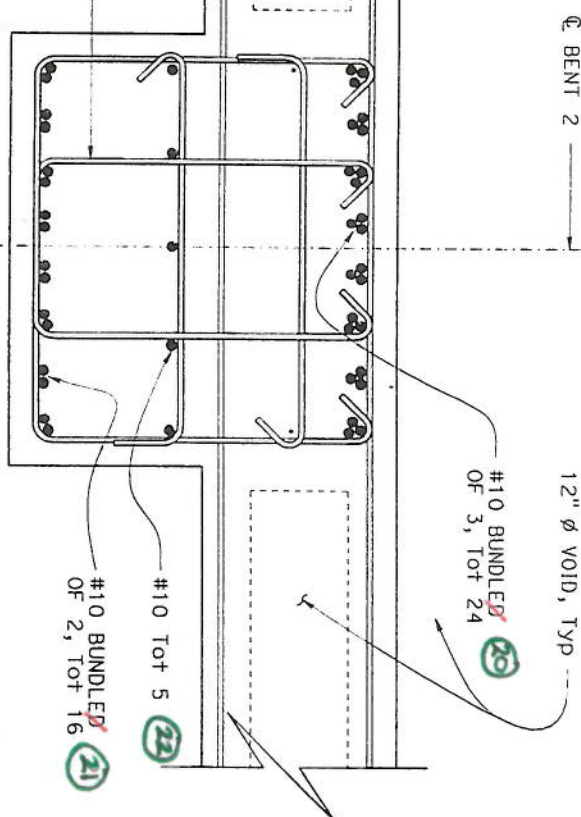
ADDITIONAL BOTTOM SLAB REINFORCEMENT

3/16" = 1'-0"

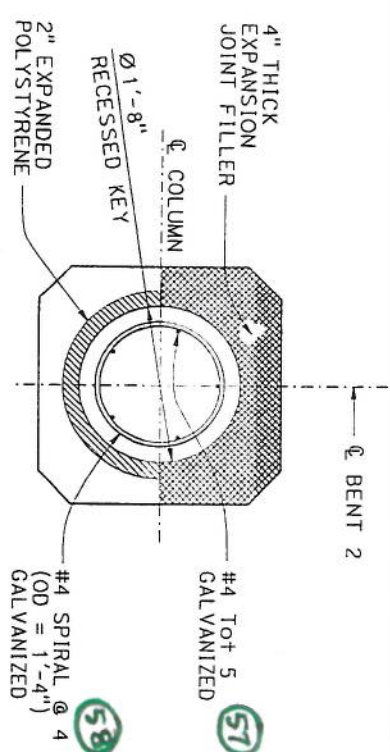
DESIGN	BY	CHECKED	STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES	BRIDGE NO.	G STREET OVERCROSSING
DETAILS	SUSAN NG	DAVID ALVAREZ	DEPARTMENT OF TRANSPORTATION	STRUCTURE DESIGN	42C0669	BOTTOM SLAB REINFORCEMENT
QUANTITIES	DAVID ALVAREZ	HILARIO TUASON		DESIGN BRANCH 6	POST MILE	
				UNIT: 3591	CONTRACT NO.: 06-2HT201	
				PROJECT NUMBER & PHASE: 0612000239-1	DISREGARD PRINTS BEARING	
				FOR REDUCED PLANS	EARLIER REVISION DATES	

POST MILE	COUNTY	ROUTE	TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fres	99			

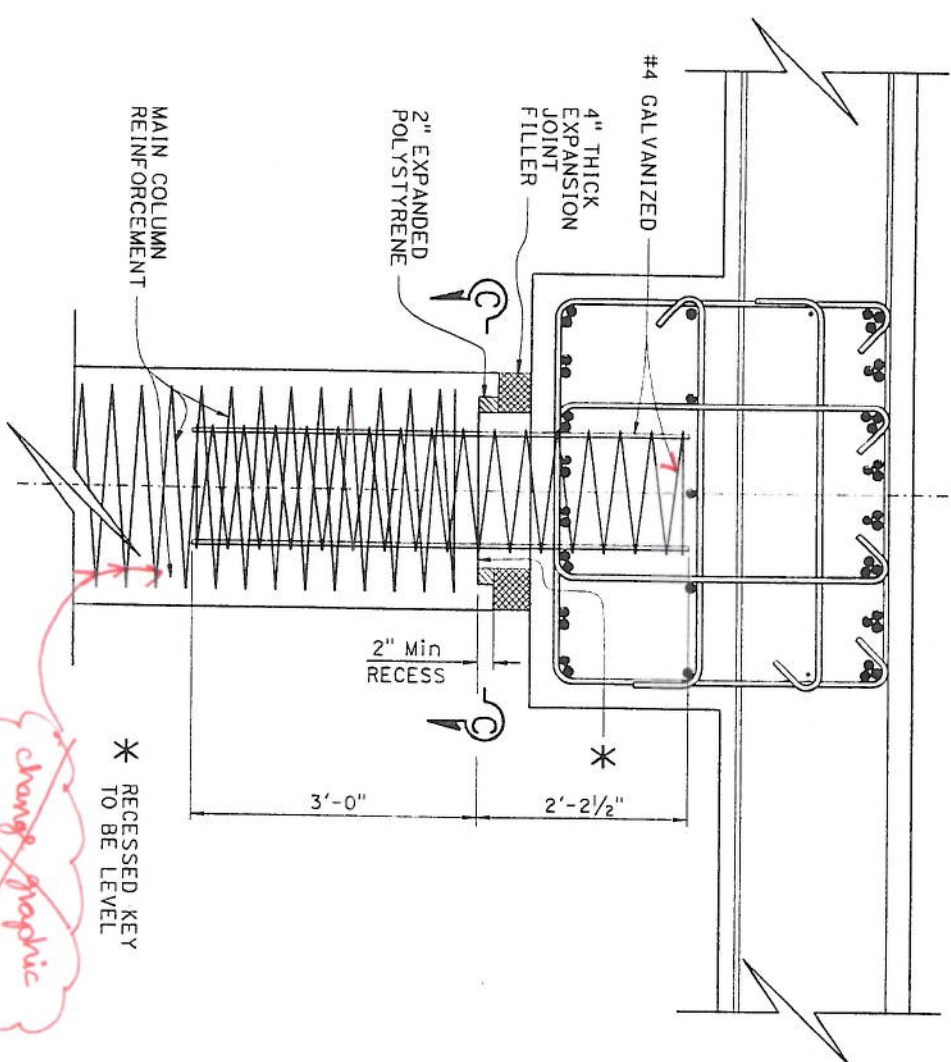
REGISTERED CIVIL ENGINEER	DATE	X
REGISTERED PROFESSIONAL ENGINEER		
RICHARD MELRO		
No. C 61617		
Exp. 06/30/13		
PLANS APPROVAL DATE		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.		



BENT CAP SECTION A-A
1" = 1'-0"



COLUMN SECTION C-C
1" = 1'-0"

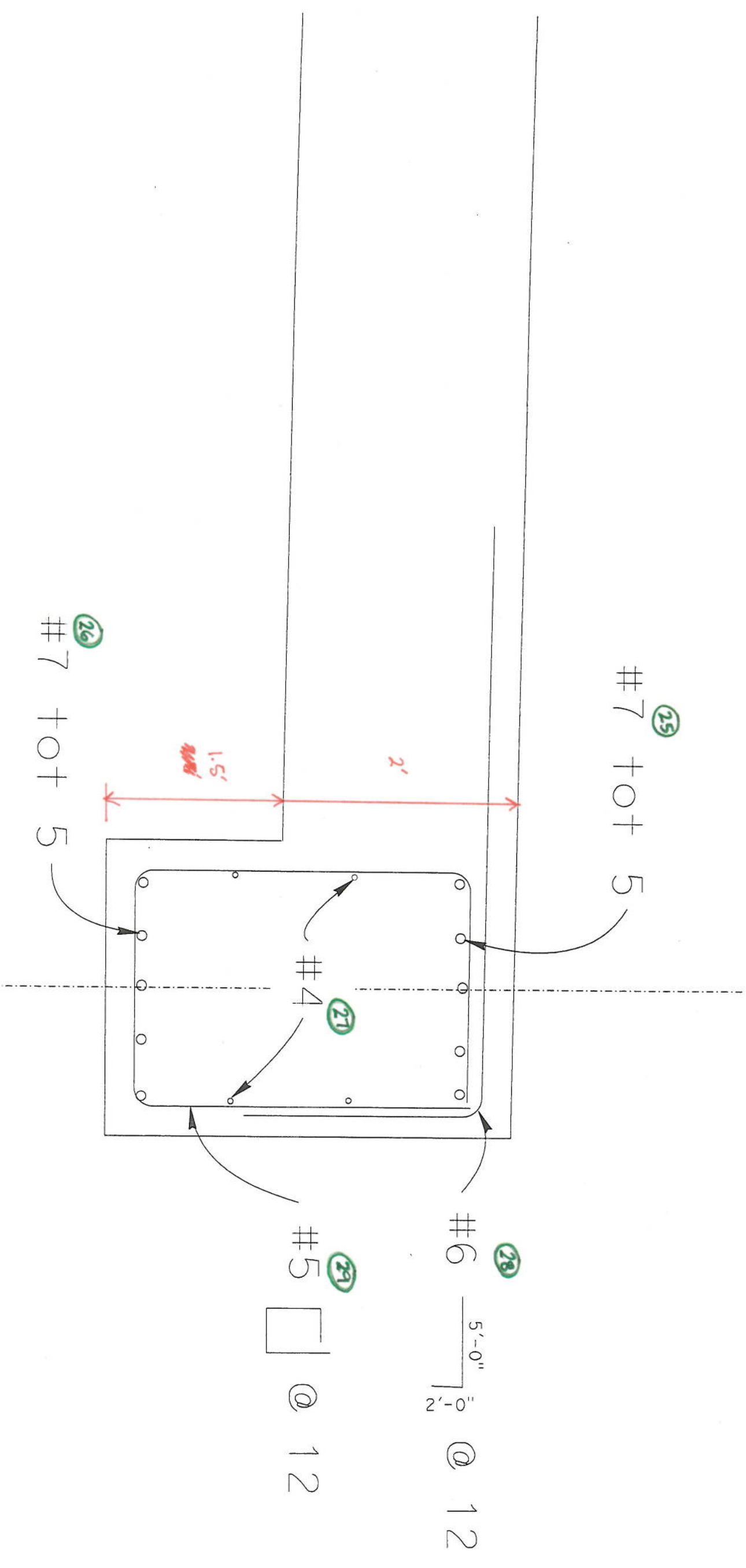


COLUMN SECTION B-B
1" = 1'-0"

* RECESSED KEY TO BE LEVEL
change graphic to hoops

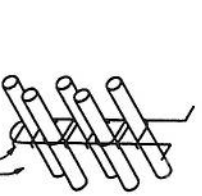
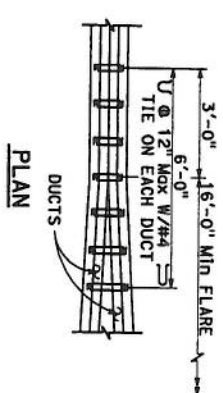
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-00)	DESIGN BY: DAVID ALVAREZ	CHECKED BY: HILARIO TUASON	STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. 12C0669	G STREET OVERCROSSING
	DETAILS BY: SUSAN NG	CHECKED BY: DAVID ALVAREZ	DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH 6	POST MILE 20.74	BENT DETAILS NO. 1
	QUANTITIES BY: DAVID ALVAREZ	CHECKED BY: HILARIO TUASON				
			UNIT: 3591	PROJECT NUMBER & PHASE: 0612000229-1	CONTRACT NO.: 06-2H1201	DISTRICT PRINTS BEARING EARLIER REVISION DATES
			ORIGINAL SCALE IN INCHES: 3/4"			DATE PLOTTED: 07-MAY-2012
						15:58

AD



Handwritten notes and sketches on the right margin, including a sketch of a rectangular area with dimensions 1'-6" and 1'-6".

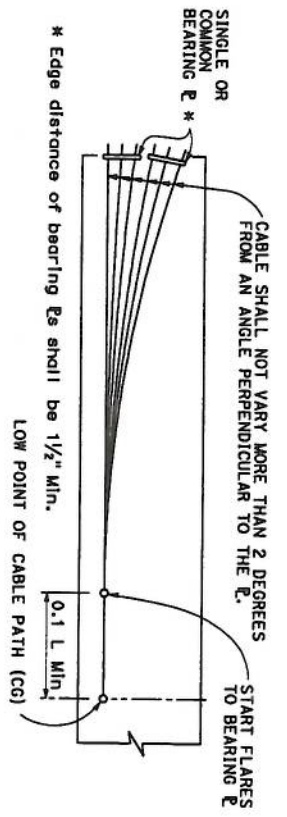
GD



NOTE:
Place closed end of duct ties in direction of flare.

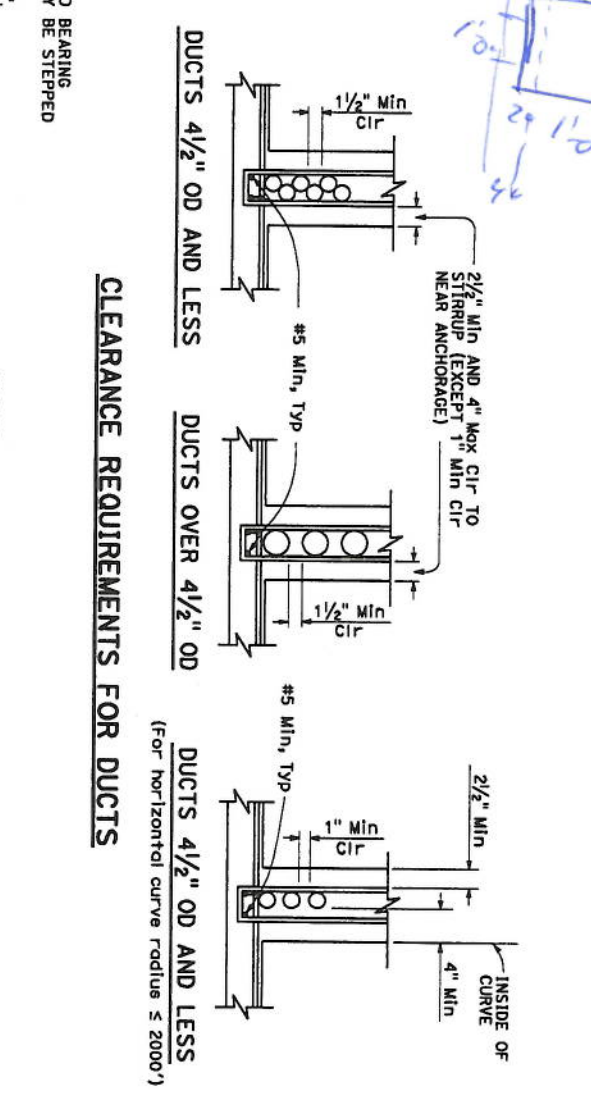
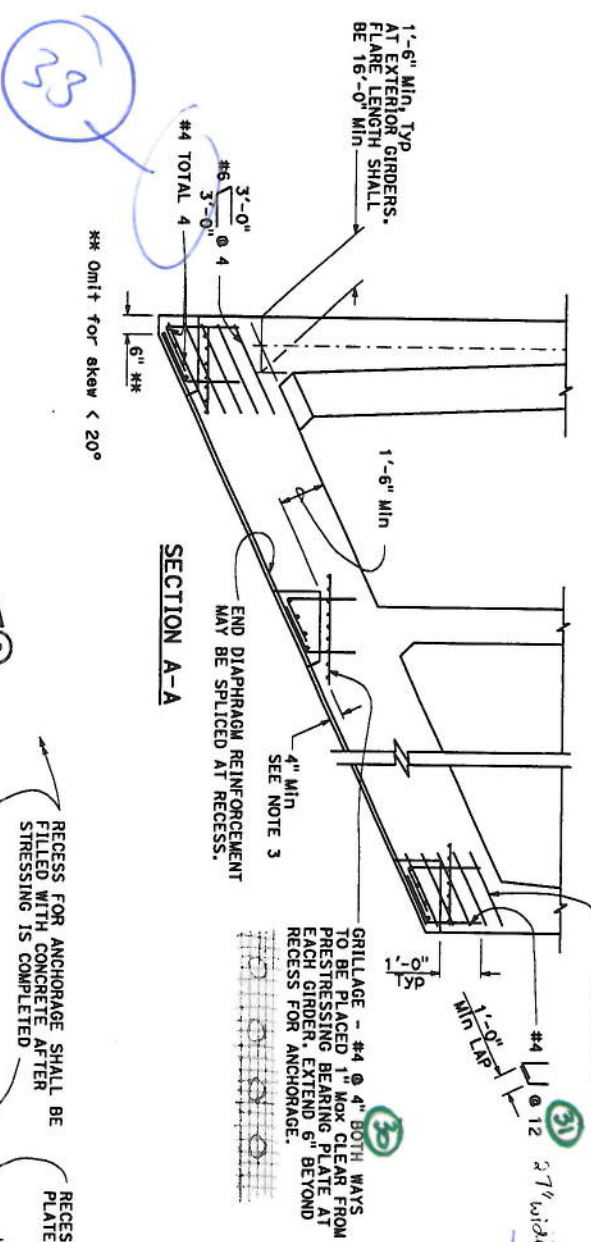
STIRRUP REINFORCEMENT AT FLARE OF GIRDER STEM

BEARING PLATE PRESTRESSING PATH



NOTES:
Girder stem may be flared near anchorage to provide clearances for the particular anchorage system.
Place duct ties, as shown for flared girder stem, at each location where ducts change horizontal direction.

Dist	County	Route	Post Miles	SHEET TOTAL
			TOTAL PROJECT	NO. SHEETS
REGISTERED CIVIL ENGINEER				
MAY 20, 2011				
PLANS APPROVAL DATE				
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THESE PLANS OR THIS PLAN SHEET.				
REGISTERED PROFESSIONAL ENGINEER				
JUN 30, 2011				
C9350				
9-30-12				
STATE OF CALIFORNIA				
REGISTERED CIVIL ENGINEER				



CLEARANCE REQUIREMENTS FOR DUCTS

NOTES:

1. Duct patterns shown are for a 1'-0" wide girder stem. For other widths, the minimum clearances must be maintained.
2. Stirrups may also be used. For continuous stirrups in girder stems greater than 1'-4" wide (ie: at flares) use 2-#5 minimum U or L.
3. 4" minimum is not required if this detail is used at hinge location.
4. For additional details, see Standard Plan 87-1.

PRESTRESS ANCHORAGE DETAILS AT SEAT TYPE ABUTMENTS

SECTION B-B

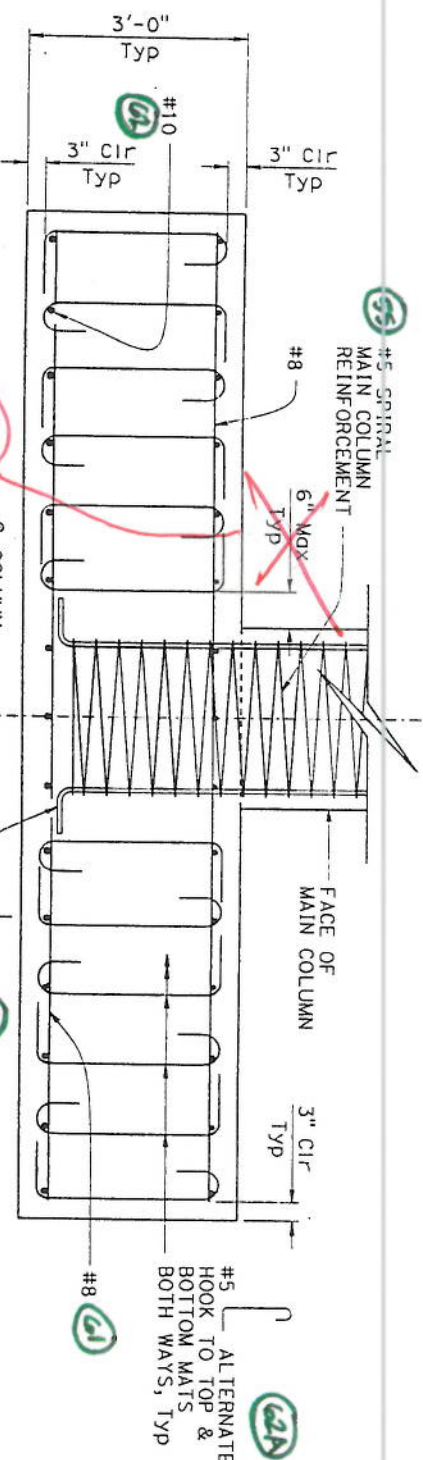
CAST-IN-PLACE PRESTRESSED GIRDER DETAILS

NO SCALE

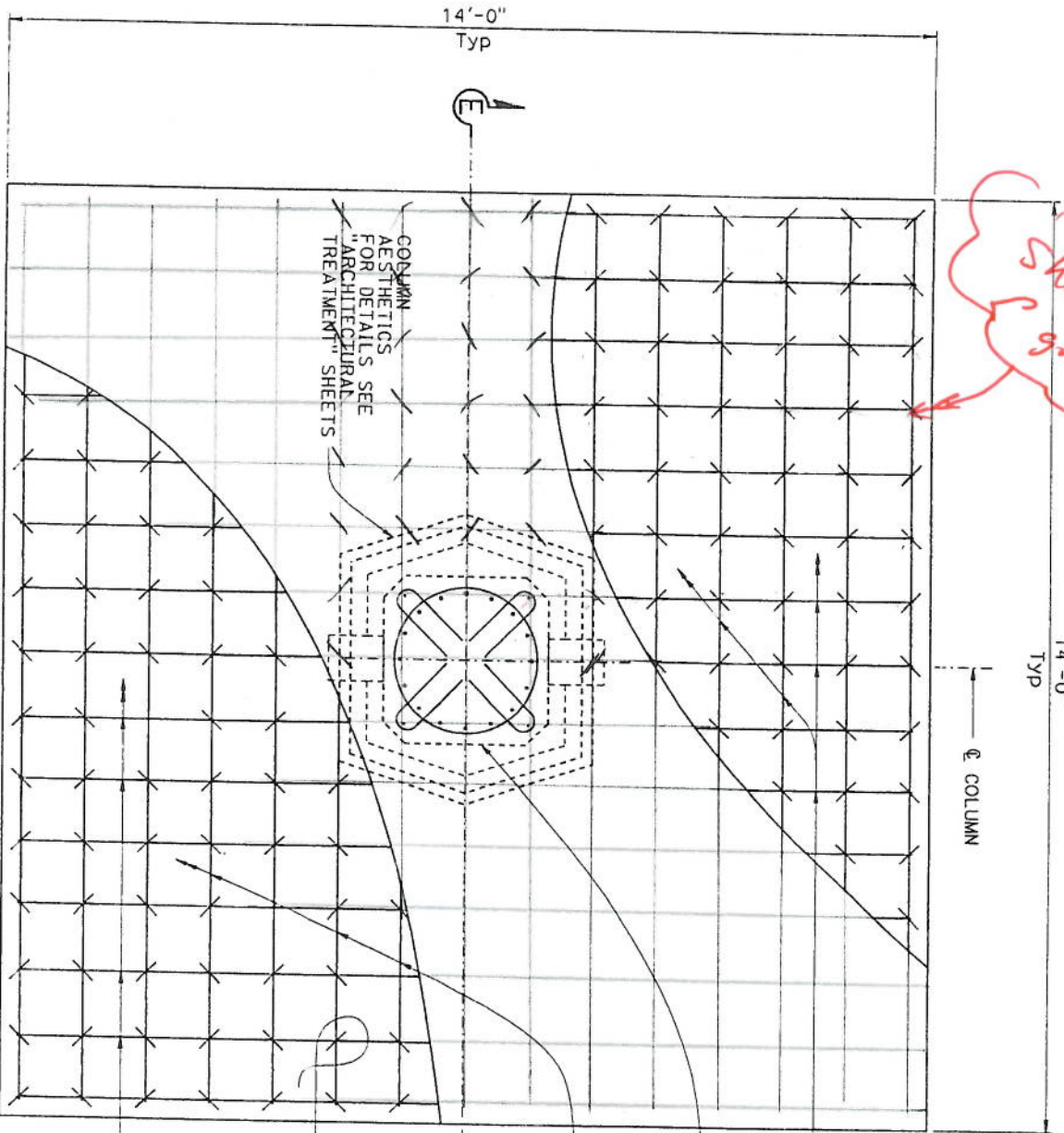
B8-5

DIST	COUNTY	ROUTE	POST MILES	SHEET TOTAL
06	Fres	99	TOTAL PROJECT	No. SHEETS

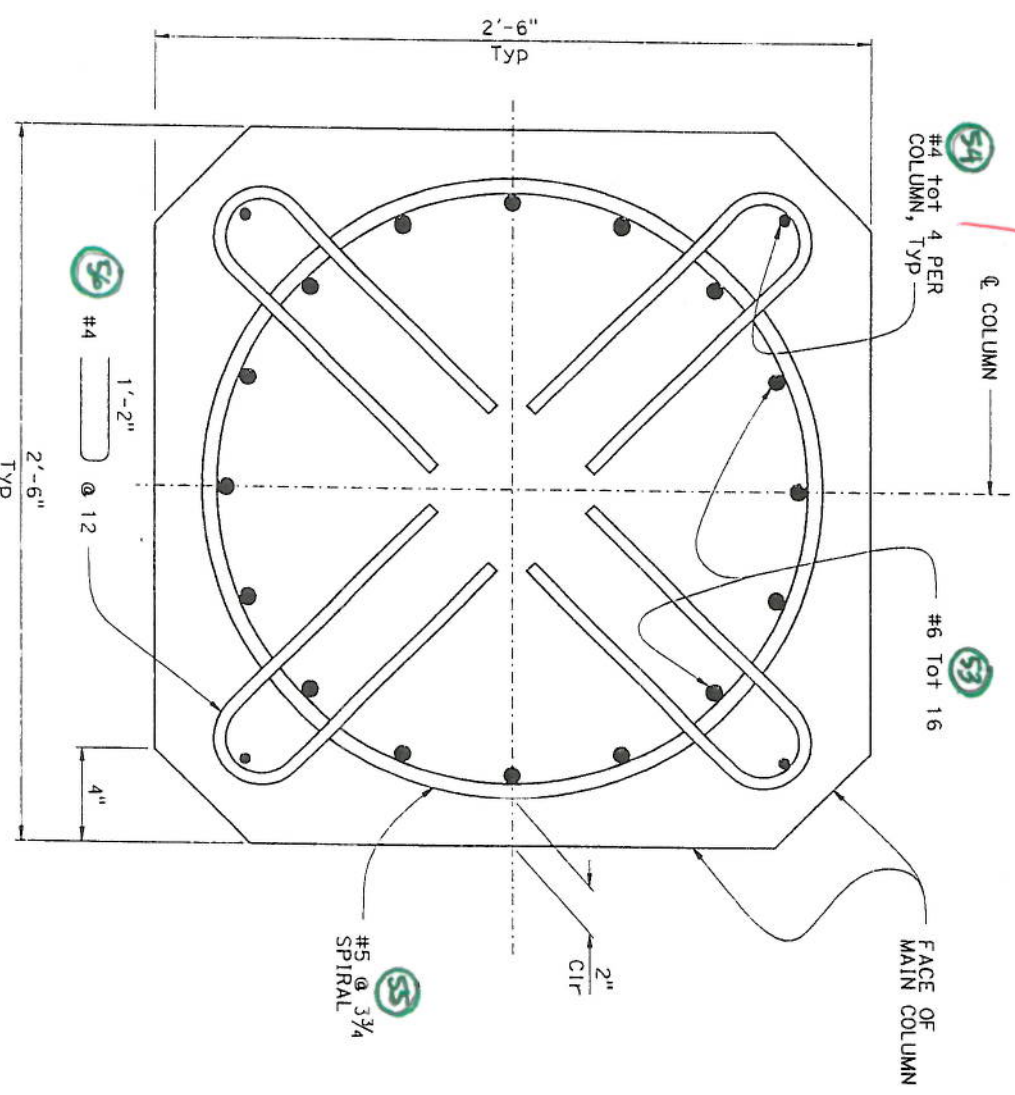
REGISTERED CIVIL ENGINEER	DATE	X
RICHARD WELKO No. C 61617 Exp. 06/30/13 STATE OF CALIFORNIA		
PLANS APPROVAL DATE		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.		



SECTION E-E
3/4" = 1'-0"



FOOTING PLAN
3/4" = 1'-0"



COLUMN SECTION D-D
3" = 1'-0"

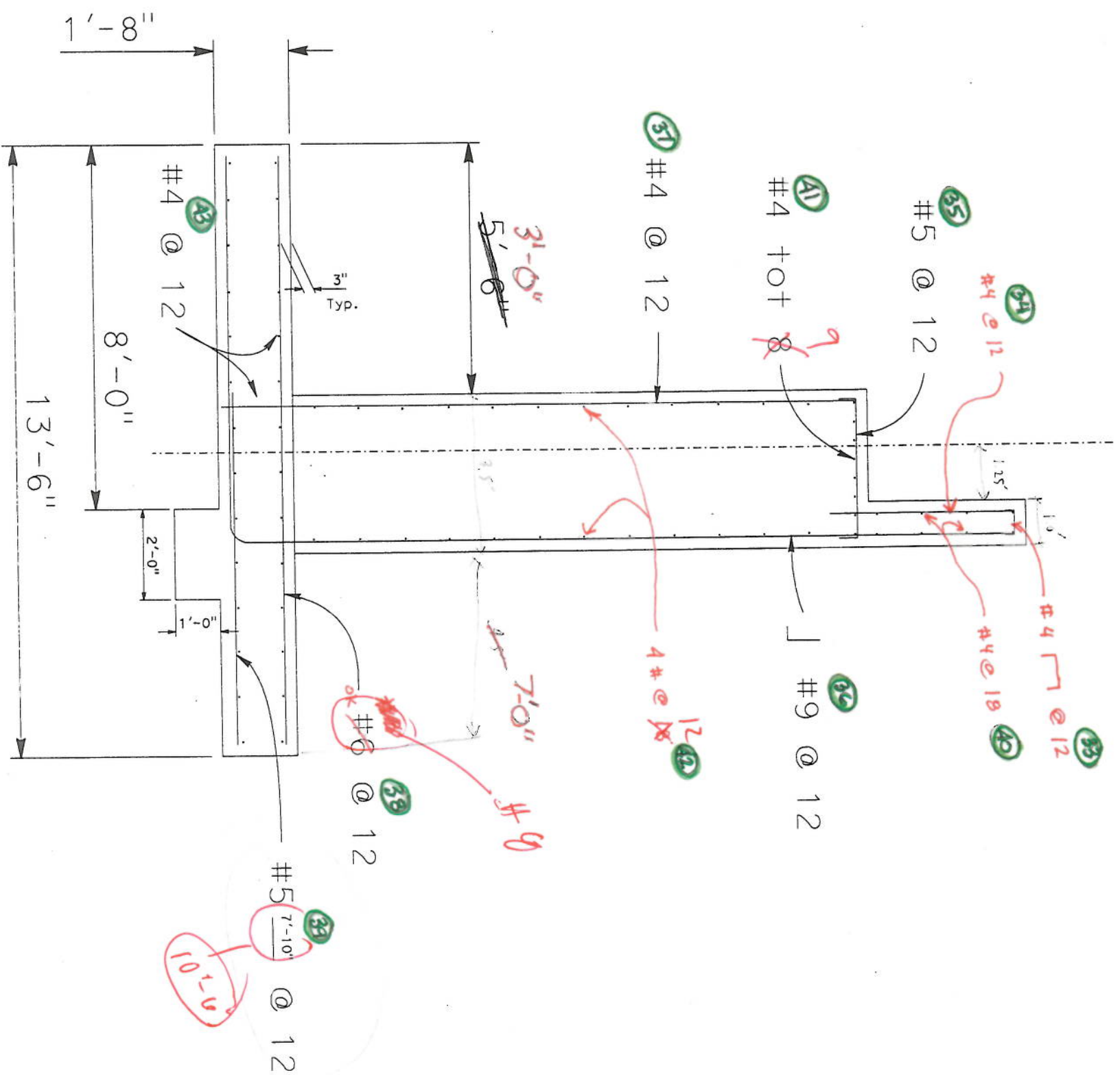
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-03)	DESIGN BY DAVID ALVAREZ	CHECKED HILARIO TIAZON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	DESIGN BRANCH 6	PROJECT NO. 06-3H1201	CONTRACT NO. 06-3H1201	DESIGN BRANCH 6	BENT DETAILS NO. 2
QUANTITIES BY DAVID ALVAREZ	CHECKED DAVID ALVAREZ	CHECKED HILARIO TIAZON	ORIGINAL SCALE 1/4" = 1'-0"	FOR REDUCED PLANS	UNIT: 3591	PROJECT NUMBER & PHASE: 06120002.19.1	CONTRACT NO. 06-3H1201	DESIGN BRANCH 6	BENT DETAILS NO. 2
DATE PLOTTED: 07-MAY-2012	TIME PLOTTED: 15:58	DATE PLOTTED: 07-MAY-2012	TIME PLOTTED: 15:58	DATE PLOTTED: 07-MAY-2012	TIME PLOTTED: 15:58	DATE PLOTTED: 07-MAY-2012	TIME PLOTTED: 15:58	DATE PLOTTED: 07-MAY-2012	TIME PLOTTED: 15:58

$$\beta = 340^\circ = \text{Fusion Angle}$$

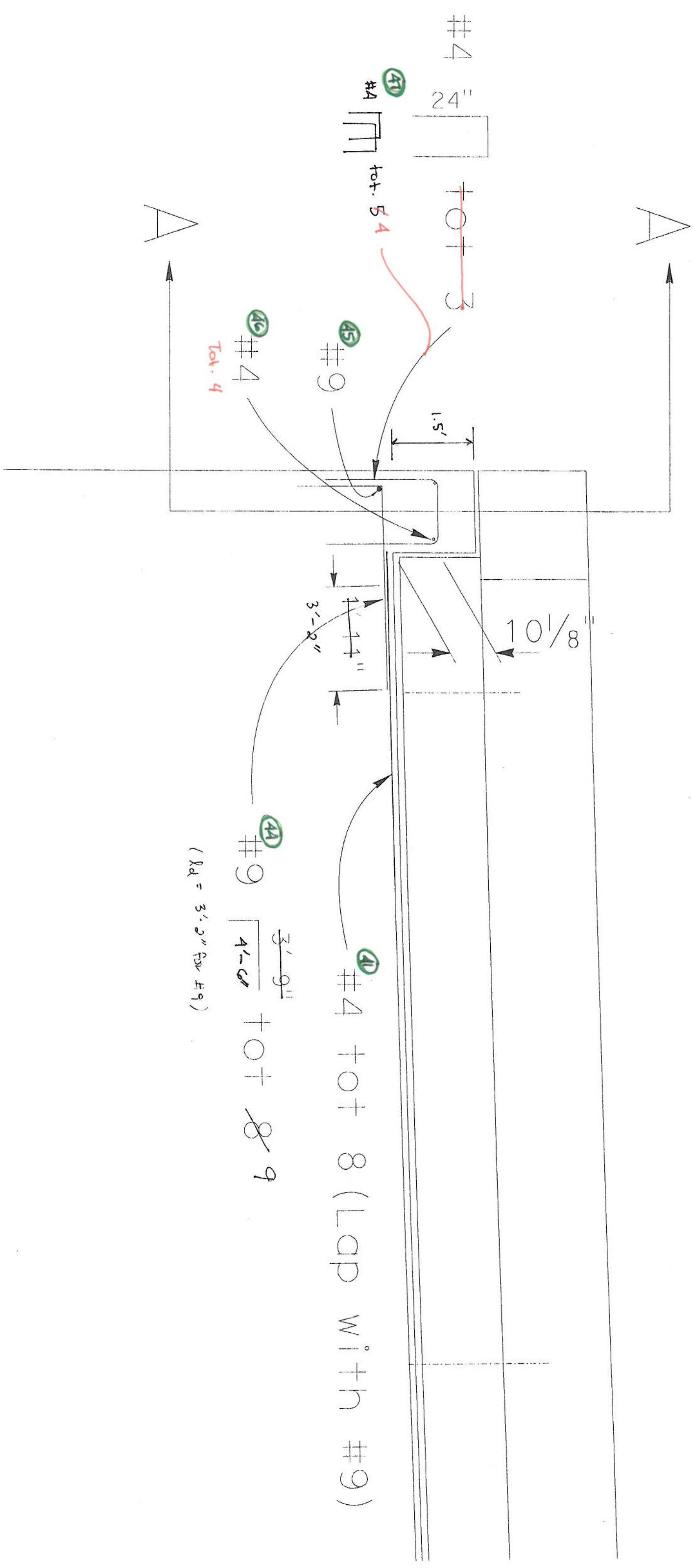
Abbr. $34^{\circ} 25.12' - 274^{\circ} - 1.66.7' = 17453'$

About H Avg = 17.613'

About 11 mty
About width Avg. = 70.04'



⇒ [SDC 7.8.4] Joint Splice Design (Version 1.0)

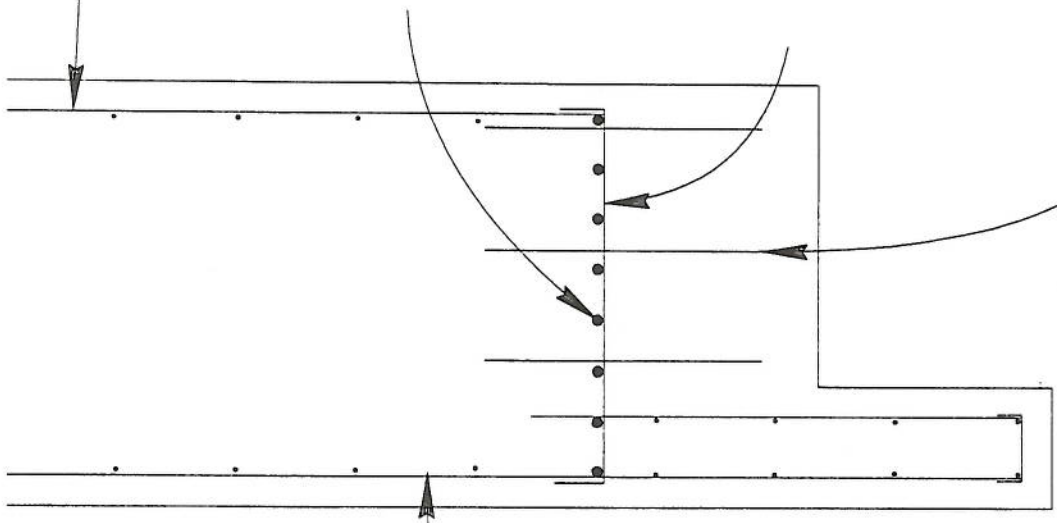


41
#4 $\left[\begin{array}{|c|} \hline 24'' \\ \hline \end{array} \right] + 0 + \cancel{3}^4$

35
#5 @ 12

44
#9 $\left[\begin{array}{|c|} \hline \cancel{3}^4 - 9'' \\ \hline 4'-6'' \\ \hline \end{array} \right] + 0 + \cancel{8}^9$

31
#4 @ 12



36
#9 @ 12

Section A-A

✓

Use Details for Retain Wall Reinforce ment

BRIDGE PLAN ABBREVIATIONS

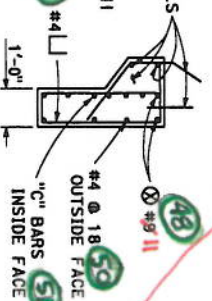
See Standard Plans A10A and A10B for additional abbreviations

Br	Bearing
CG	Center of gravity
CIP	Cast-in-place
Cont	Continuous
FS	For side
IF	Inside face
NS	Near side
OF	Outside face
J	Outer, outer left bridge
K	Outer left bridge
S	Outer right bridge
T	Outer, outer right bridge
T&B	Top and bottom

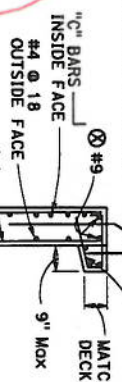
SEE BARRIER DETAILS

Use #11 bars if wingwall supports a sidewalk.

SECTION J-J
Without overhang



SEE BARRIER DETAILS

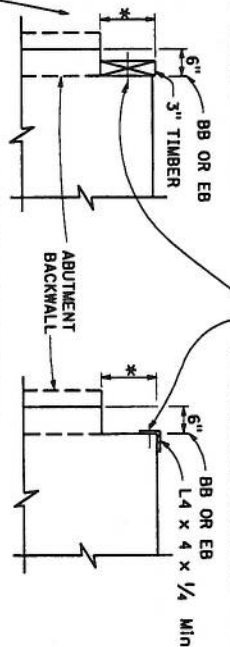


SECTION J-J
With overhang

* Depth of paving notch or dimension to abutment backwall construction joint, varies, see abutment details.

1/2" min dia bolt, 3'-0" max spacing, 3" min embedment insert assembly may be used upon engineer's approval.

TEMPORARY BUMPERS
BRIDGE DETAIL 1-2

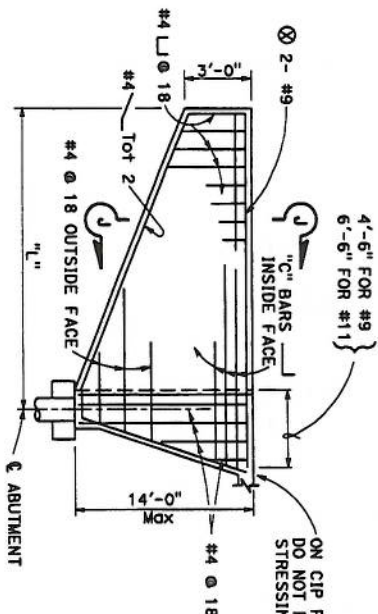


ALTERNATIVE 1

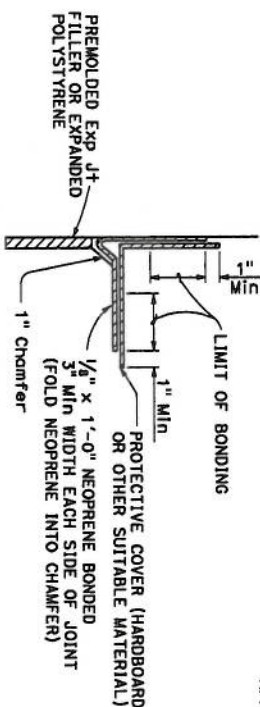
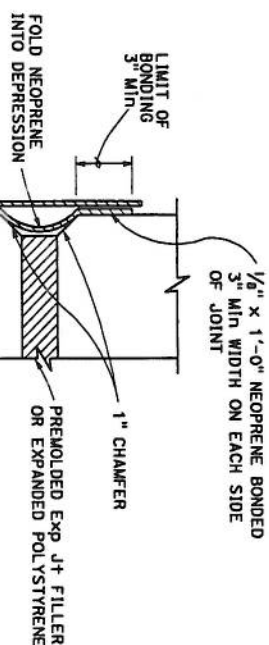
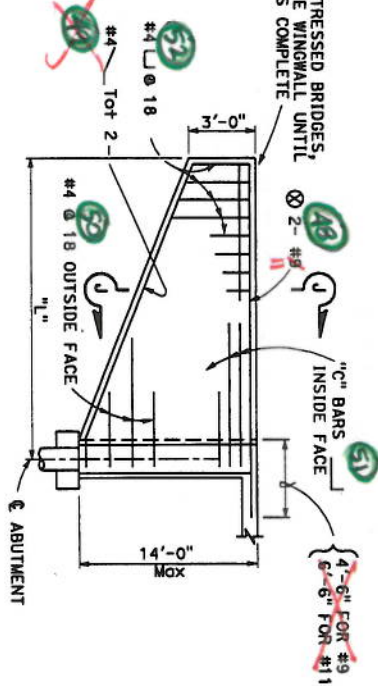
ALTERNATIVE 2

TOP OF BUMPER TO BE AT OR ABOVE THE TOP OF DECK CONCRETE. BUMPERS AND BOLTS TO BE REMOVED IMMEDIATELY PRIOR TO PLACING APPROACH PAVEMENT

ELEVATION
SLOPING ABUTMENT

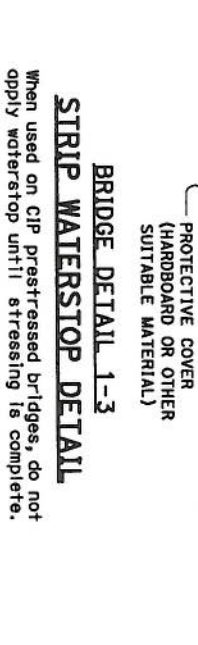


ELEVATION
VERTICAL ABUTMENT



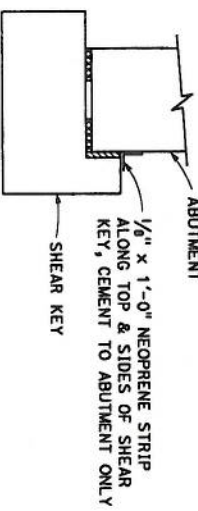
BRIDGE DETAIL 1-4
STRIP WATERSTOP CORNER DETAIL

When used on CIP prestressed bridges, do not apply waterstop until stressing is complete.



BRIDGE DETAIL 1-3
STRIP WATERSTOP DETAIL

When used on CIP prestressed bridges, do not apply waterstop until stressing is complete.



BRIDGE DETAIL 1-6
SHEAR KEY JOINT PROTECTION

1/2"	#5 @ 9"
12'-0"	#5 @ 9"
14'-0"	#6 @ 9"
16'-0"	#7 @ 9"
18'-0"	#8 @ 9"
20'-0"	#9 @ 9"

BRIDGE DETAILS

NO SCALE

BO-1